

Universitat Politècnica De Valencia



Doctoral Thesis

The effect of environmental certificates for hotels on
the purchasing decision of online customers

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Table of Contents:

1. Abstract.....	6
2. Introduction.....	8
3. Literature review.....	10
4. Methodology.....	12
5. Talent Management and tourism industry.....	18
<u>5.1</u> Objectives.....	18
<u>5.2</u> Methodology.....	18
<u>5.3</u> Main Results and Contributions.....	19
<u>5.4</u> Limitations.....	19
<u>5.5</u> Conclusions.....	20
<u>5.6</u> References.....	20
6. THE IMPORTANCE OF ENVIRONMENTAL CERTIFICATES FOR GREEN HOTEL: BIBLIOMETRIC AND NETWORK ANALYSIS.....	21
<u>6.1</u> Abstract.....	21
<u>6.2</u> Introduction.....	21
<u>6.3</u> Literature review.....	22
<u>6.4</u> Methodology.....	25
<u>6.5</u> Results and discussion.....	26
<u>6.6</u> Conclusion.....	37
<u>6.7</u> References.....	37
7. Factors Motivating Customers to Pay More for Staying in Green Hotels.....	39
<u>7.1</u> Abstract.....	39
<u>7.2</u> Introduction.....	40
<u>7.3</u> Purpose of the study.....	40
<u>7.4</u> Literature review.....	41
<u>7.5</u> Methodology.....	45
<u>7.6</u> Findings.....	46
<u>7.7</u> Conclusion.....	47
<u>7.8</u> Implications.....	48
<u>7.9</u> References.....	50

8. The Effect of Green Certificates on the Purchasing Decisions of Online Customers in Green Hotels: A Case Study from Saudi Arabia.....	53
<u>8.1</u> Abstract	53
<u>8.2</u> Introduction	53
<u>8.3</u> Literature Review and Development of Hypotheses.....	54
<u>8.4</u> Methodology.....	58
<u>8.5</u> Partial Least Squares (PLS).....	60
<u>8.6</u> Conclusions	64
<u>8.7</u> References	65
9. Main Results and Findings.....	68
10. General Conclusion.....	71
11. Limitations and Further Research.....	73
12. References.....	75
13. Appendix.....	84

1. Abstract:

This PhD thesis studies the impact of green hotel certificates on online customers' purchase decisions. In recent years, the hospitality industry has paid close attention to sustainability, and hotels have increasingly adopted ecologically friendly methods. Green certificates, which serve as acknowledgement of a hotel's dedication to sustainability, are one such program. However, the impact of these green certifications on online customers' purchase decisions is still understudied.

This study's principal goals are twofold. First, it intends to investigate the impact of green credentials on the purchasing decisions of online customers when picking hotels. This goal entails examining online customers' attitudes toward green certificates, including their awareness, comprehension, and trust in these sustainability credentials. Furthermore, the study aims to determine whether the presence of green certificates influences customers' intents to book a hotel and their readiness to pay a premium for environmentally friendly accommodations.

The second goal of this research is to discover the elements that mediate or regulate the association between green certificates and purchase decisions made by customers. Several factors, including customer demographics, environmental beliefs, and online review ratings, may influence the impact of green certificates on customers' purchasing decisions. This study intends to provide significant insights into the underlying mechanisms that impact the influence of green certificates on purchase decisions by analysing these moderating and mediating elements.

This paper examined the factors that motivate online customers to pay more for staying in green hotels. It found that environmental awareness has led to a growing demand for green products and services, and that eco-certifications are an important motivating factor for customers to spend extra money. Additionally, eco-certifications are an important motivating factor for customers to pay more. The study conducted by Gan & Nuli (2018) showed that millennials were willing to pay more to hotels that adopted green practices in their business model. Additionally, customers are likely to pay a premium for staying in green hotels when they are satisfied with their past experience.

As of 2018, 46% of travellers have extended their support in opting for green hotels and choosing other eco-friendly accommodations, and 67% of the travellers now show their willingness to spend 5% more on their traveling activities. This trend has gained much-needed importance in the present era.

According to the findings, green certifications, environmental considerations, and green brand perception all have a substantial impact on online consumer satisfaction and purchasing decisions in the hotel industry. This study presents a thorough framework that demonstrates the relationship between hotels' environmental ambitions and customers' willingness to return and pay a premium price.

The findings of this doctoral thesis suggest that environmental certificates have a positive impact on the purchasing decision of online customers for green hotels. Talent management in the tourism industry is important, and discrimination is one factor that influences the human resource. Spain and USA are the largest contributors, with the keywords "environmental certification," "tourism," and "sustainability" appearing the most. 44% of the articles used in this research were published in the journals "Sustainability," "International Journal of Hospitality Management," "Cornell Hospitality Quarterly," and "Journal of Sustainable Tourism." This doctoral thesis has demonstrated the importance of environmental certificates in promoting green practices within the hospitality industry. Through bibliometric and network

analysis, it has revealed that environmental certificates can serve as an important tool for promoting sustainable tourism and reducing the industry's negative impact on the environment.

Additionally, it has highlighted the need for greater standardization and transparency in the certification process to ensure that these certificates maintain their value and credibility. Green lodging is becoming increasingly popular, with 61% of global travellers intending to choose an eco-friendly accommodation at least once in their life. Consumers are willing to spend 5-20% extra money on hotels that abide by environmental rules and regulations. Environmental certificates can serve as a signal to customers that a hotel is committed to sustainability, which can increase the perceived value of the hotel and influence the customer's purchasing decision. Certifications that are widely recognized and have high standards, such as LEED or Green Key, are more likely to influence the purchasing decision of online customers compared to certifications that are less well-known or have lower standards.

Demographic characteristics of online customers are also a significant factor in the impact of environmental certificates on their purchasing decisions. Green certificates are important for promoting eco-friendly practices in green hotels, as they motivate customers to pay a premium. This study has implications for the tourism industry and businesses that are seeking to attract environmentally conscious customers. Hotels should consider the type of environmental certificate they obtain and consider the demographic characteristics of their target customers when promoting their environmental certifications. Future research could investigate the impact of environmental certifications on other aspects of the hotel experience, such as customer satisfaction and loyalty.

2. Introduction

The global hospitality industry is currently undergoing a significant transformation as sustainability practices become increasingly important to both businesses and consumers. In response to this growing awareness, hotels worldwide are embracing environmentally friendly initiatives to reduce their ecological footprint and appeal to sustainability-conscious travellers. One prevalent approach is the implementation of green certificates, which serve as tangible evidence of a hotel's commitment to sustainable operations. Green certificates, also known as eco-labels or environmental certifications, provide consumers with a recognizable symbol of environmental responsibility and serve as a key factor in their decision-making process when selecting accommodations.

Extensive research has emphasized the significance of sustainability in the hospitality industry, particularly regarding consumers' preference for eco-friendly accommodations. Previous studies have explored the impact of various sustainability practices, such as energy efficiency, waste management, and water conservation, on consumer behaviour and their willingness to pay a premium for sustainable options (Kim & Han, 2019; Laroche et al., 2019). However, the specific influence of green certificates on the purchasing decisions of online customers remains relatively unexplored. This doctoral thesis aims to bridge this research gap by investigating the effect of green certificates for hotels on the purchasing decisions of online customers, focusing on the context of e-commerce platforms and online booking channels.

Research Questions:

The main research questions guiding this study are:

- How do green certificates for hotels affect the purchasing decision of online customers.
- Are online customers willing to pay premium for hotels with green certificates compared to those without such certifications?

Objectives:

To address the research question, this study has the following objectives:

1. To assess the awareness, understanding, and perception of online customers regarding green certificates in the hotel industry. This objective seeks to gain insights into customers' knowledge and comprehension of green certifications, as well as their perception of the credibility and significance of these environmental credentials (Kotler et al., 2019).
2. To examine the impact of green certificates on customers' intentions to book a hotel. This objective aims to investigate whether the presence of green certificates influences customers' decisions in favour of hotels with sustainability credentials over those without such certifications (Jones & Comfort, 2018).
3. To evaluate the willingness of online customers to pay a premium for sustainable accommodations with green certificates. This objective explores whether customers recognize and value the sustainability efforts of hotels with green certificates and are willing to allocate additional financial resources for eco-friendly accommodations (Han et al., 2021).

Significance of the study:

This doctoral thesis holds significant implications for the hospitality industry, consumers, and sustainability advocates. Firstly, it provides valuable insights for hotel managers and marketers to understand the effectiveness of green certificates in influencing consumers' purchasing decisions in the online environment. By comprehending how these certifications impact consumer behaviour, hoteliers can strategically communicate their sustainability initiatives and leverage green certificates to attract sustainability-conscious guests (Yang et al., 2020).

Moreover, this study contributes to the existing body of knowledge by linking and complementing previous research on sustainability certifications and consumer behaviour in the hospitality industry. While numerous studies have explored the influence of sustainability initiatives on consumer preferences, the specific impact of green certificates on online customers' decision-making processes requires further investigation. By filling this research gap, this thesis enhances our understanding of how green certificates uniquely affect consumer behaviour in the context of online hotel bookings (Xie et al., 2021).

Outcomes of the Study:

The findings of this study are expected to provide several outcomes. Firstly, they will contribute to theoretical knowledge by shedding light on the relationship between green certificates and online customers' purchasing decisions, thereby expanding the current understanding of sustainability-related consumer behaviour in the hospitality industry. Secondly, the research outcomes will offer practical implications for hotel managers and marketers to develop effective strategies for promoting green certificates and leveraging their impact on customers' decision-making processes.

Additionally, this study will identify potential moderating factors, such as customer demographics, environmental attitudes, and online review ratings, which may influence the relationship between green certificates and purchasing decisions. By uncovering these underlying mechanisms, the study aims to provide a more nuanced understanding of the complexities involved in the influence of green certificates on online customers' choices.

In the subsequent chapters, this thesis will review relevant literature to establish a theoretical framework, describe the research methodology employed, analyse the collected data, and discuss the findings in relation to existing research. The outcomes of this study will contribute to the existing body of knowledge, inform practical strategies for hotels, and pave the way for future research endeavours exploring the intersection of sustainability certifications, consumer behaviour, and online hotel bookings.

3. Literature review:

The introduction of sustainable practices in the hospitality industry has received a great deal of attention in recent years. As consumers become more environmentally conscious, hotels are increasingly implementing green initiatives to attract more sustainability-conscious guests. A notable strategy by hotels is the use of green certificates, also known as ecolabels or environmental certifications. These certifications serve as visible indicators of a hotel's sustainability commitments and can influence consumer purchasing decisions. The purpose of this literature review is to summarize and synthesize relevant research on the impact of hotel green certificates on online customer purchasing decisions, while at the same time identifying research gaps that this PhD dissertation aims to fill.

The Importance of Green Certificates: Green Certificates play an important role in communicating a hotel's commitment to sustainability. They provide customers with an easily recognizable and reliable signal that distinguishes your eco-friendly accommodation from others on the market. Several studies have shown that consumers perceive green certificates as an indicator of higher environmental performance, leading to more trust, positive attitudes and preference for certified hotels (Gössling et al., 2019; Kim et al., 2017). This means that green certification can influence consumer purchasing decisions, encouraging them to choose sustainable hotels over non-certified alternatives.

Impact on Online Customer Behaviour: The rise of online platforms for hotel bookings is having a profound impact on consumer behaviour and decision-making processes. Online customers have access to a wealth of information, including environmental certifications, through various channels such as hotel websites, review platforms and online travel agencies. However, the specific impact of green certificates on online customer purchasing decisions has not yet been well studied. Some studies have explored the impact of sustainability-related factors on online hotel bookings (e.g., Hsiao et al., 2018; Hu et al., 2017), but specifics of green certificates for online customer bookings are not available. There are research gaps regarding the impact of Decision. Green Certificate

Awareness and Recognition: Understanding customer perceptions and perceptions of Green Certificates is critical to understanding the impact of Green Certificates on purchasing decisions. Previous research suggests that customers have different levels of awareness and understanding of green certification (Kim et al., 2018; Lee et al., 2019). Factors such as demographics, environmental attitudes, and previous experience with sustainability practices can influence customer knowledge and acceptance of green certificates. Additionally, research highlights the importance of credibility and trust in customer perceptions of green certification (Abreu-Novais et al., 2020; Kim et al., 2017). These results demonstrate the need to explore online customer awareness, understanding and trust in green certificates in the context of hotels.

Booking Intention and Paying Intent: An important aspect of an online shopper's buying decision is their intention to book a green certified property. Studies show that sustainability considerations can have a positive impact on customer intentions to book green hotels (Kim and Lee, 2019; Wang et al., 2019). However, research specifically focused on the impact of green certificates on customer booking intent is limited. Additionally, it is important for both hotels and consumers to understand whether customers are willing to pay a premium for sustainable accommodations with green certificates. Previous studies have shown willingness to pay more for accredited hotels (Huang and Ye, 2021; Wang et al., 2019) and reluctance to pay premium rates. (Kim et al., 2017; Zafar et al., 2021).

Research Gap and Contribution:

Previous research has explored various aspects of sustainability in the hospitality industry; however, the specific impact of green certificates on online consumer purchasing decisions remains an under-researched area. This doctoral dissertation aims to fill this research gap by focusing on the impact of green certificates on online customer perceptions, intentions, and

willingness to pay for sustainable hotel stays. By investigating these aspects, the study contributes to the existing literature on sustainability certification and consumer behavior in the context of online hotel bookings.

One research gap pertains to the limited understanding of online customers. While studies have been conducted to investigate the impact of green certificates on consumer behavior in the hotel industry, there is a unique research gap when it comes to online customers. As online booking platforms are becoming increasingly popular, understanding how green credentials influence the decision-making process of online clients is critical. Investigating the distinct characteristics of online customers, as well as their choices, motivations, and perceptions of green certificates, can help close this research gap.

Another study gap exists in understanding the particular aspects that influence online customers' views and evaluation of green certificates for hotels. Investigating the factors used by online customers to evaluate the reliability, relevance, and trustworthiness of green certificates can yield useful insights. Understanding the characteristics that influence consumer perceptions and assessments of green certificates can assist hotels and regulators in developing effective methods for communicating the value of these certifications to online customers.

Additionally, there is a research gap in determining whether online customers are willing to pay a premium for hotels with green certificates compared to those without such certifications. Understanding customers' perceptions of value, their willingness to allocate additional financial resources for environmentally friendly accommodations, and the factors that influence their willingness to pay a premium can provide valuable insights into the economic implications of green certificates. Exploring this research gap can assist hotels and policymakers in understanding the potential market demand for eco-certified lodging.

Moreover, while theoretical discussions on the influence of green certificates on purchase decisions exist, empirical research explicitly addressing the actual behavior of online customers regarding green certificates is scarce. Many existing studies rely on self-reported intentions or hypothetical scenarios rather than actual buying behavior. To close this study gap, empirical research with online hotel booking clients is needed to acquire insights into their actual decision-making process and the impact of green certificates on their purchase behavior.

The results of this work will provide hotel managers and marketers with valuable insights to develop effective strategies for communicating and utilizing green certification to attract environmentally conscious online customers. Additionally, the findings of this study will enhance our understanding of the underlying mechanisms that shape the impact of green certificates on purchasing decisions, thereby supporting the industry's sustainability goals.

In summary, while previous studies have recognized the importance of green certificates and their impact on consumer behavior, there is still an under-researched area specifically focusing on the impact of green certificates on online customer purchasing decisions in the hospitality industry. This literature review has identified research gaps in understanding the impact of green certificates on online customer perceptions, intentions, and willingness to pay. The future doctoral dissertation aims to fill this gap and contribute to the existing body of knowledge by investigating the unique context of online customer behavior and its relationship to green certification in the hotel industry.

4. Methodology:

Introduction:

The methodological component of this doctoral thesis gives a thorough framework for analysing the effect of environmental certificates for hotels on the purchase decisions of online clients. This section describes in full the research strategy, data gathering methodologies, and analysis strategies employed in the study. The approach seeks to assure the validity, reliability, and generalizability of the findings while satisfying the study objectives.

I. Research Design:

A. Research methodology Explanation: The research methodology for this study uses a mixed-method approach, integrating quantitative methods with bibliometric analyses. This method provides a thorough knowledge of the intricate interaction between environmental credentials and online client purchase decisions (Johnson & Onwuegbuzie, 2004; Creswell & Plano Clark, 2017).

B. Research Design Justification: The mixed-method research design is appropriate for this study because it allows for the exploration of both numerical data and subjective insights. A greater comprehension of the research issue can be obtained by combining quantitative data analysis with qualitative interpretation (Creswell & Plano Clark, 2017; Tashakkori & Teddlie, 2003).

II. Quantitative Methodology:

A. Sampling Technique and Sample Size Determination:

1. Sampling Technique: The study utilizes non-probability sampling to gather data from two of Riyadh's largest five-star hotels, namely the Hilton Riyadh and the Hyatt Regency Riyadh Olaya (Hilton Riyadh Hotel & Residences, Riyadh, Saudi Arabia). The choice of these hotels is based on specific criteria, including their high ratings and sustainability efforts as indicated on booking.com. The Hilton Riyadh has over 6000 reviews, while the Hyatt Regency Riyadh Olaya has over 10,000 reviews, signifying their popularity among guests.

To collect data, the researchers employed a self-administered questionnaire consisting of closed-ended questions. The questionnaire utilizes a five-point Likert scale, ranging from strongly disagree (1) to strongly agree (5). This format allows participants to indicate their level of agreement or disagreement with the provided statements.

It is important to note that this sampling approach falls under non-probability sampling, which means the participants were not selected at random, and the findings may not be generalizable to the entire population. Instead, the focus is on obtaining insights from the specific group of guests staying at these two hotels during the data collection period.

By employing non-probability sampling, the researchers are able to gather data efficiently and effectively from a targeted group that aligns with the objectives of the study. However, it is crucial to acknowledge the limitations of this sampling approach, including potential selection bias and the inability to generalize the findings beyond the sampled hotels and their guests.

2. Sample Size Determination: In the given scenario, the sample size determination for the quantitative methodology resulted in 161 usable surveys that fulfilled the research requirements. Out of the total surveys collected, 39 were rejected due to missing information, leaving a final sample size of 161 respondents. The high response rate of 80.5% was achieved through the drop and pick method employed by the researchers to collect data from hotel customers

The researchers also considered various demographic variables in the selection of respondents, including gender, age, level of qualification, and annual income

B. Data Collection Methods:

1. Questionnaire Design: The structured questionnaire for investigating the effect of environmental certificates on the purchasing decisions of online customers is based on a comprehensive literature review and validated scales. The questionnaire is divided into four

categories, each containing three questions, and utilizes a Likert scale to measure respondents' perceptions and behaviors. The questionnaire aims to capture variables such as awareness and perception of environmental certificates, online customer preferences, and purchasing behaviors. (Hair, Black, Babin, & Anderson, 2014).

2. The data collection process for this study will involve administering the questionnaire online using a reliable survey platform. Participants will be recruited from two 5-star green hotels located in Riyadh. Before participating in the study, each participant will be provided with detailed information about the purpose of the research and their rights as participants. Informed consent will be obtained from each participant to ensure their voluntary participation and to protect their confidentiality and privacy.

By using an online survey platform, data collection can be efficient and convenient for both the researchers and the participants. It allows for easy dissemination of the questionnaire to a large number of potential respondents and ensures that data is collected in a standardized manner. The use of a reliable survey platform can also provide features for data validation and quality control, such as response validation rules and data encryption. (Dillman, Smyth, & Christian, 2014).

C. Data Analysis:

In this research, the four main indicators mentioned play crucial roles in capturing different aspects of customers' attitudes and intentions. Let's discuss each indicator in more detail:

-Green Certificates and Awards: This indicator refers to the presence of environmental certifications and awards received by hotels. It signifies the level of commitment and adherence to sustainable practices in hotel operations. Customers may perceive hotels with green certificates and awards as environmentally responsible and may prioritize them when making purchasing decisions. This indicator reflects the external recognition of a hotel's sustainability efforts.

-Environmental Concerns: This indicator measures customers' level of concern and awareness about environmental issues. It assesses customers' attitudes toward environmental preservation, climate change, and sustainable practices. Customers with higher environmental concerns are more likely to prioritize eco-friendly options, such as hotels with environmental certifications, when making purchasing decisions. This indicator captures the intrinsic motivation and values of customers related to sustainability.

-Intentions Toward Green Hotels: This indicator focuses on customers' intentions to choose green hotels. It measures the likelihood that customers will select hotels with environmental certifications and sustainable practices. It reflects customers' behavioral intentions and preferences for eco-friendly accommodations. Higher intentions toward green hotels indicate a greater likelihood of choosing environmentally certified hotels when making online booking decisions.

-Intention to Pay Premium for Sustainable Production: This indicator assesses customers' willingness to pay a premium for sustainable production practices. It reflects customers' perceptions of the value associated with environmentally certified hotels and their willingness to allocate additional financial resources to support sustainable practices. Customers with a higher intention to pay a premium for sustainable production are more likely to prioritize environmentally certified hotels over non-certified ones, even if it involves additional costs.

These indicators collectively capture customers' attitudes, concerns, intentions, and willingness to pay related to environmental certificates for hotels. By including these indicators in your doctoral thesis, you can gain insights into the factors influencing customers' purchasing decisions and understand the role of environmental certifications in shaping customer behavior.

It is important to ensure the validity and reliability of the measures used for each indicator. Conducting a thorough literature review and selecting validated scales or developing own measurement items based on established theoretical frameworks will enhance the credibility of your research. Additionally, consider the statistical analysis techniques, such as structural equation modeling using SmartPLS, to examine the relationships between these indicators and the purchasing decision of online customers.

Data analysis in this study includes the use of statistical software such as SmartPLS and Microsoft Excel for data analysis and processing. Collected data are analysed using a variety of

Multivariate analysis techniques chosen based on the nature of the relationship between the dependent and independent variables in the study.

The SmartPLS methodology is appropriate for this research because of the following reasons:

1. **complex relationships:** Understanding the intricate linkages between environmental certificates and purchase decisions, which can be influenced by a variety of factors, is the research goal. SmartPLS is well-suited for assessing structural equation models (SEM), which may successfully capture and evaluate complicated interactions (Hair Jr, Hult, Ringle, & Sarstedt, 2017).
2. **tiny sample size:** Doctoral research frequently encounters sample size constraints, and SmartPLS is well-known for its ability to handle tiny sample numbers. It implements the partial least squares (PLS) algorithm, which is appropriate for smaller sample sizes and yields consistent results (Hair Jr et al., 2017).
3. **Non-normal data:** In some circumstances, the study data may not follow a normal distribution. In such cases, SmartPLS is advantageous since it is less constrained in terms of data distribution assumptions than other SEM techniques. It can effectively handle non-normal data (Henseler, Ringle, & Sarstedt, 2015).
4. **Predictive modelling focus:** SmartPLS is a good alternative for predictive modeling if the study objective is primarily focused on predicting the purchasing decisions of online customers based on environmental certificates. PLS-SEM stresses predictive modeling and can deliver accurate latent construct predictions (Hair Jr et al., 2017).

Let us now go over the steps in the SmartPLS technique applied in this research:

1. **Define the study's goal and hypotheses:** Clearly state the goal of your research, which is to investigate the impact of environmental credentials on online customers' purchase decisions. Create research hypotheses stating the expected relationships between variables. (Hair Jr et al., 2017).

2. **Data collection:** Gather information from internet clients who have booked hotel reservations. Obtain information about their attitudes about environmental certificates and shopping decisions. Make sure the data you collect is relevant to your research goal. (Hair Jr et al., 2017).

3. **Data preprocessing** entails cleaning and preparing the data, addressing missing values and outliers, and ensuring the data is in the proper format for analysis. SmartPLS includes capabilities for data preprocessing, such as handling missing data and detecting outliers (Hair Jr et al., 2017).

4. **Create a measurement model:** In your research model, specify the indicators or survey items that reflect the latent constructs. Choose metrics that reflect customers' attitudes toward environmental credentials and their purchase decisions. Determine the relationship between these indications and the underlying constructs. (Hair Jr et al., 2017)

5. **Assess measurement model:** SmartPLS can be used to evaluate the measurement model's dependability and validity. To confirm the measurement's quality, examine the factor loadings, composite reliability, and average variance extracted (AVE) to ensure the quality of measurement. (Hair Jr et al., 2017)

6. **Define the relationships between the latent constructs in the structural model.** Specify the path between environmental credentials and purchase decisions in this example. Based on the research purpose, speculate if this association is beneficial or negative. (Hair Jr. et al., 2017)

7. **SmartPLS should be used to estimate the parameters of the structural model.** To assess the relevance and strength of the correlations between the constructs, obtain the path coefficients, t-values, and bootstrapping results. SmartPLS uses robust estimate approaches, such as bootstrapping, to determine the importance of correlations (Hair Jr et al., 2017; Henseler et al., 2015).

8. **Assess model fit:** Use goodness-of-fit measurements such as the goodness-of-fit index (GoF) or the R-squared value to assess the overall fit of the model. Examine how well the model fits the data and how effectively it depicts the relationships between variables. SmartPLS assesses model fit using goodness-of-fit measurements and bootstrap-based tests (Hair Jr et al., 2017; Henseler et al., 2015).

9. Interpret and report the findings: Analyse the SmartPLS analysis results, understanding the calculated path coefficients and their relevance. Assess the strength and direction of the link between environmental credentials and purchase decisions. Report your findings and discuss their consequences in relation to your research goal. Make careful to include proper literature references to back up your opinions and conclusions. (Hair Jr. et al., 2017)

The Heterotrait-Monotrait (HTMT) ratio is a measure used in SmartPLS analysis to assess discriminant validity, specifically in the context of evaluating the relationships between latent constructs. In your doctoral thesis on the effect of environmental certificates for hotels on the purchasing decision of online customers, the HTMT matrix can be utilized to examine the discriminant validity of the constructs involved in your study.

The HTMT matrix compares the strength of the relationships between different constructs in relation to the strength of the relationship within each construct. It is computed by dividing the average correlation between constructs by the square root of the average variance extracted (AVE) for each construct. This ratio is then compared to a threshold value to assess the discriminant validity.

To apply the HTMT matrix in the analysis, follow these steps:

-Construct Measurement Model: Specify the latent constructs in your research model, such as "Environmental Certificates" and "Purchasing Decision." Select indicators or survey items that measure these constructs and assess their reliability and validity.

-Calculate Average Variance Extracted (AVE): Compute the AVE for each construct, which represents the amount of variance captured by the indicators for each construct. AVE should ideally be above 0.5 for a good level of convergent validity.

-Calculate Correlations: Calculate the pairwise correlations between all constructs involved in your study. SmartPLS provides correlation values as part of the analysis output.

-Compute HTMT Ratio: Divide the average correlation between constructs by the square root of the AVE for each construct. This will give you the HTMT ratio for each pair of constructs.

-Assess Discriminant Validity: Compare the HTMT ratios to a threshold value to evaluate discriminant validity. A commonly used threshold is 0.85, where HTMT values below this threshold indicate good discriminant validity.

-Interpretation: Analyze the HTMT ratios to determine if the constructs in your study exhibit discriminant validity. If the HTMT ratios for all pairs of constructs are below the threshold, it indicates that the constructs are distinct and measure different underlying concepts.

Several essential assessment measures, including direct effects, explained variances, and the Q2 test for endogenous variables, can be employed in a SmartPLS investigation of the effect of environmental certificates for hotels on online customer purchase decisions. Let's talk about each of these measures in relation to your research:

1. Direct Effects: In the structural model, direct effects are the links between the exogenous factors (independent variables) and the endogenous variables (dependent variables). The environmental certificates would be the exogenous variable in your study, while the endogenous variable would be online customers' purchasing decisions. The degree and relevance of the relationship between environmental certificates and purchase decisions can be determined by studying the direct consequences.

2. Explained Variances: Explained variances, also known as R-squared values, represent the amount of variance explained by exogenous variables in endogenous variables. The explained variance in your study would show how much of the variation in online customers' purchasing decisions may be linked to environmental certificates. Higher explained variances suggest that the exogenous variable has a greater influence on the endogenous variable. The R2 values for each endogenous variable in the structural model are provided by SmartPLS.

3. The Q2 test for endogenous variables in PLS-SEM is a measure of predictive importance for endogenous variables. It evaluates the model's predictive power by assessing the difference between the model's predicted relevance and the relevance of a model with zero predictive ability. The Q2 test can be used in your study to examine how effectively environmental credentials predict online client purchasing decisions. A higher Q2 score suggests that the model is more predictive. SmartPLS delivers Q2 values for each endogenous variable, demonstrating its capacity to anticipate.

Analysing the direct effects, explained variances, and Q2 test findings can provide insight into the relationship between environmental credentials and online client purchasing decisions. These indicators help you assess the model's strength, importance, and predictive power in describing consumer behavior. These results should be interpreted and reported based on the specific data obtained in your analysis.

To ensure the reliability of the data collected, researchers ensure that the data are of high quality and come from reliable sources. This includes recruiting participants from reputable and environmentally friendly hotels and implementing rigorous data collection procedures. Researchers maintain integrity throughout their studies, ensuring the data collected is authentic and avoiding the possibility of tampering. To ensure validity, this study employs reliable data collection methods throughout the research process. This includes using structured questionnaires based on validated scales, obtaining informed consent from participants, and adhering to ethical guidelines. This study aims to provide reliable and valid conclusions by adhering to strict research standards.

Overall, this study employs robust data analysis techniques that maintain data integrity and ensure the reliability, credibility and validity of the results in accordance with established research practices.

D. Limitations of the Quantitative Methodology: The limitations of the quantitative methodology should be acknowledged, such as potential response biases, limited generalizability due to the specific sample selection, and the inability to establish causal relationships (Bryman, 2016).

III. Bibliometric and Network Analysis:

Multiple techniques and methodologies were used in the data analysis process for this bibliographic study in order to derive useful insights from the data acquired. The bibliographic data for articles published between 2010 and 2020 were collected using the Web of Science database. This study collected and examined 49 publications in total.

For data analysis and preparation, Microsoft Excel was used. Data purification, calculations, and the development of graphs and visualizations are all made easier by the software. MS Excel is a sophisticated application that enables academics to efficiently organize and alter data.

For this investigation, Histcite, a specialist software for bibliographic analysis and information visualization, was used. Histcite's sophisticated capabilities include the ability to analyse publishing patterns, author networks, citation counts, and other bibliographic data. Histcite enables academics to learn more about Trends, significant authors and institutions, and citation links between works are all visualized.

VosViewer was also utilized for scientific mapping and grouping of the papers. VosViewer is a powerful software application that allows researchers to visualize bibliographic networks and study links between numerous factors such as authors, institutions, keywords, and journals. This makes it easier to identify research clusters, emerging trends, and major themes in the literature.

Researchers were able to thoroughly evaluate bibliographic data using these tools and approaches. They looked at publishing trends through time, identified the most productive institutions and authors, found the most popular journals in the subject, and evaluated the geographical distribution of research productivity. The visualization features of Histcite and VosViewer aided in the interpretation and presentation of results, offering a broader grasp of the state of research on the impact of environmental certifications on online customer purchase decisions.

Overall, the combination of Web of Science, MS Excel, Histcite, and VosViewer gives a solid foundation for doing bibliographic analyses, allowing researchers to address research gaps and build on existing field knowledge. It is now feasible to get useful knowledge from the literature.

IV. Ethical Considerations:

A. Informed Consent: Participants will be fully informed about the purpose of the study, their rights, and the voluntary nature of their participation. Informed consent will be obtained from each participant prior to data collection (American Psychological Association, 2017).

B. Confidentiality and Anonymity: The privacy and confidentiality of participants' data will be strictly maintained. Participants will be assigned pseudonyms, and any identifying information will be kept confidential (Bryman, 2016).

C. Research Ethics Approval: Ethical approval will be sought from the relevant institutional review board or ethics committee prior to conducting the study, ensuring compliance with ethical guidelines (American Psychological Association, 2017).

Conclusion:

The methodology presented in this doctoral thesis provides a robust and comprehensive approach to investigating the effect of environmental certificates for hotels on the purchasing decisions of online customers. By employing a mixed-method research design, combining quantitative and bibliometric analysis, a deeper understanding of the research objective can be achieved. The specific steps involved in data collection, analysis, and integration ensure rigorous research procedures and contribute to the validity and reliability of the findings.

5. Talent Management and tourism industry

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Keywords | Talent management, tourism industry, economy, migration, growth

Objectives | The tourism and hotel industries are among the most robust industries in the world. It is also one of the most dynamic industries with a high rate of innovation in terms of services. With new opportunities for the industries opening up in many places around the world each year, thousands of opportunities are created that attract people of all walks of life. These industries are purely service industries. Therefore, the human resource plays a critical role in ensuring that the investors can retain their clients and attract new clients. Usually, the kind of service that is offered in the two industries has a lot of influence on the future performance of the businesses. That is why many investors in the industries always search for top talents that are creative and dynamic. In getting the top talents in the human resource, it is important to have a talent management program. The objectives of talent management include:

- To identify individuals with creative minds from the entire population that can use their creativity to move the tourism industry forward.
- To use the available talent to move the industry forward
- To identify the challenges that are facing human resources in the tourism industry and how these challenges affect the industry.
- To understand the key skills that are required in the tourism industry around the world.

Methodology | The major objective of this conference paper is to understand talent management in the tourism industry and how talent management plays a big role in giving organizations in the industry a competitive advantage. The conference paper offers insight on how different aspects of talent management can help an organization in the tourism industry to remain profitable for a long time.

Any study on talent management and the kind of impact the talents have in tourism industry or any other organization in any industry is an empirical review. The conference paper aims to inform readers on the importance of talent management and how it can be used to improve the performance of the organizations. In the modern world, identifying and getting the right talent as well as retaining that talent is a major management challenge for many organizations. As much as success of an

organization depends on several other things, the ability to get, retain, and retail the correct talent has a very big influence. This conference paper is based on primary data collected from different companies and individuals in the tourism industry.

Main Results and Contributions | The conference studies show that many tourism industry players regard human resource as the backbone of the industry. The study shows that there are forms of discrimination and segregation in the industry. In terms of gender, the female gender is often paid lower than their male colleagues. Worse, women are often hired for charming factors which include attracting male clients. Human resource productivity in the tourism industry shows disparities in different countries. The disparities are as a result of different strategies that countries have taken in order to increase productive. Whereas some countries entice their tourism human resource by better pay, others invest in training.

As new tourism sites are coming up, the industry is attracting more people. However, the potential employees in the industry are always seeking to work in countries that pay the highest. Dubai in recent times has been the most preferred destination for tourists. The high number of tourists has made the tourism industry in Dubai to be very lucrative. This has led to more people looking for tourism related jobs to seek opportunities at Dubai. The need for high pay and the fact that employers are seeking highly skilled workers has led to an increase in migration of tourism industry workers. Countries such as Spain with strong economies have seen people willing to do jobs related to the tourism industry migrate there. In countries such as UAE that have high tourism opportunities, there have been many taxi drivers migrating there. This is because taxi jobs have a positive correlation with tourism industry. Many people from Asia have also migrated to work in the gulf region in tourism industry or tourism related jobs.

As much as there is growth in the tourism industry, there is a huge shortage of skills. Many investors in the industry are used the old methods that boring to the clients. There is a lot of shortage in terms of multi-lingual experts, which has made the industry face a crisis in terms of communication. The industry has not invested enough in professional marketing, which has greatly disadvantaged many firms.

Limitations | The paper analyzes very significant talent management factors. However, there are certain limitations of the study. The first limitation is that the study is open to the general industry and does not itself to a specific population for example a country or religion. This therefore can be led to have a skewed conclusion. Secondly, the study does not factor in certain factors that influence talent in human resource such as security, language and economic status. For example, tourists are more willing to go into a country with security even if that country's economic status is low. Therefore people willing to work in tourism sector will always move to such countries because they are assured of a job despite low pay.

Conclusions | Talent management in tourism industry plays an important role. Therefore, it is necessary for the players to ensure that they come up with the correct strategies that will be able to attract the right talents. From the conference, it can be established that there are several factors that influence the human resource in the tourism industry. Discrimination is one such factor where it has been shown that women are more discriminate than men. Other factors include the pay, economic status of a country and other factors.

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6. THE IMPORTANCE OF ENVIRONMENTAL CERTIFICATES FOR GREEN HOTEL: BIBLIOMETRIC AND NETWORK ANALYSIS

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Abstract: Environmental problem has become a popular research area. Efforts are being made at an international level for creating a sustainable environment. Hospitality industry is considered to be one of the main industries of a country. It makes contributions in the development of sustainable environment. Hospitality industry is adopting environmental certifications and green hotels concept rapidly. In this research, we performed bibliometric analysis of 49 articles on the topic of importance of environmental certificates for green hotels. Results indicate that majority of the journals have articles with a large number of citations, which indicates that they are high-quality journals. The results indicate that Cornell University, Polytechnic University of Valencia, Hong Kong Polytechnic University, and George Washington University are the institutes producing high-quality research work, as 28% of the researchers cited the articles published by the researchers of these universities. Results indicate that universities of Spain and USA are the largest contributors, as they have published 52% the total articles in the area under this study. USA and Spain are considered to be the world superpowers; their interest in this area of research unveils the importance of the topic. The authors Verma, Chan, and Rivera are the core researchers of this area, as they published 20% of the overall articles discussed in this study, which makes them the gurus of the research area.

Keywords: environmental certification, sustainability, tourism.

JEL Classification: M10, M30, Z30.

1 Introduction

Pollution is one of the biggest problems of the current era. It is considered a universal problem. Efforts are being made at an international level to overcome this problem. There are organizations that are working for creating a sustainable environment all over the world. Government and non-governmental organizations (NGOs) are making an effort to make this world pollution free. In this context, they are making efforts to create awareness among the general public and organizations to adopt the best practices which help in maintaining a sustaining environment. Hospitality industry is considered to be a core component of the economy of a country.

A great stress is given upon implementation of the best environment in the hospitality industry and increasing the number of green hotels worldwide. Since it is a popular agenda, it has been a research area widely studied since decades. Importance of environmental certifications has also received an immense

popularity among researchers associated with environmental sciences and hospitality management. A lot of work has been done in the domain of environmental certifications and their impact on hospitality industry. An environmental certification is defined as a process that defines, monitors, and ensures that a business, process, product, or a system is aligned with specific standards (Pritchard, 1969).

In the perspective of hospitality industry (Pritchard, 1969), an environment certification has three main objectives, that is, it promotes the implementation of sustainable environment practices, it helps in enhancing the profitability of the hotel, and it helps in attracting potential guests using environmental performance of the hotel during the online hotel booking process. The study by Pritchard (1969) revealed that certifications provide the expertise in implementation of sustainable best environment practices and they help in reducing the “greenwash” claims too. Greenwash can be defined as a false impression that an organization, product, or service is environmentally sound.

International Organization for Standardization (ISO) is an international NGO. It aims to develop worldwide standards for the exchange of products and services. ISO 14000 comprises 20 environmental standards. These standards are a combination of different guidelines focusing on environmental problems. Among these 20 standards, ISO 14001 is the only one which can make an organization certified. It contains five principles, that is, environmental policy, planning, implementation and operation, monitoring and corrective actions, and management review (Chan, 2011).

Research has shown that financial performance of hotels can be improved by adopting the best environmental practices (Blackman, et al., 2014), and customers also prefer hotels having ISO 14001 certifications. Due to the aforementioned facts, trend in hotels for the adoption of ISO certifications is increasing. Hotels are striving to adopt the best environmental practices, and for this purpose, they are spending a lot of money on the environmental certifications of their human resources. There are many organizations which are offering environmental certifications. ISO has introduced a number of certifications in the domain of environment sciences.

These certifications help in maintaining a sustaining environment in the society and ensure that the functioning of businesses is according to the guidelines of ISO. ISO 14001 environmental certifications have become very high in demand. These certifications have many benefits, but the most important benefits are twofold: these help in improving the internal operations and the other benefit is that they provide third-party sustainability credential, which helps in improving sales. According to Blackman, et al. (2014), ISO 14001 environmental certifications are associated with higher rates of hotels. In the Asia Pacific region, Hong Kong was the first country to have a hotel with ISO 14001 certification.

Apart from that, a large number of international hotels such as Serena, Marriot, Ramada, and Holiday Inn have adopted environmental certifications and are making their contribution in protecting the planet. But still, majority of the hotels are not ISO 14001 certified (Becken and McLennan, 2017), which indicates an alarming situation, and there is a need to

spread word about the implementation of ISO 14001 certifications in the hospitality industry.

Literature on environmental certifications and their importance for green hotels has grown tremendously in the last few years. It is evident from the literature that green hotels perform higher than the non-green hotels. According to Blackman, et al. (2014), clients consider environmental certification as a key attribute of a green hotel. Hospitality industry has the potential to make significant contribution for the creation of sustaining environment. Hence, an increase in the number of green hotels will definitely make a contribution to the sustaining environment. This paper has been divided into five sections: 1 Introduction, 2 Literature Review, 3 Methodology, 4 Results and Discussion, and 5 Conclusion.

Research objectives

This research aims to perform bibliometric network analysis of the existing literature on the importance of environmental certificates for green hotels. The aim behind bibliometric network analysis is to fill the research gap. Some of the important research objectives are mentioned below:

- a) to identify the number of publications in the area under consideration from 2010 to 2020;
- b) to identify the institute with the highest number of publications;
- c) to identify the author with the highest number of publications;
- d) to identify the most popular journal in the area of interest; and
- e) to identify the most productive country.

2 Literature review

Environmental certifications have immense importance in the hospitality industry, and it has been a popular research topic in the domain of hospitality industry. A large number of researchers have made significant contributions in this domain. Chan (2010) discussed the impact of environmental management systems (EMSs) on the work ethics of the hotel staff. Researchers used a qualitative case study, where they collected data from three types of employees, that is, executives, supervisors, and general staff members.

They collected data through semi-structured interviews and performed a thematic analysis to answer the research questions. Results revealed that EMSs have both positive and negative impacts on the working attitude of hotel employees. A top-down approach for the implementation of EMS was found to be suitable for a hotel having large Chinese manpower. It was also observed that low employee involvement in the planning stage has no impact on employee commitment to an EMS.

Researchers like Tari (2010) analyzed the level of quality and environmental management concurrently. They analyzed the joint and individual impact of the level of quality and environmental management on the performance of hotels. They collected empirical data from 301 three- to five-star Spanish hotels and performed cluster analysis for the identification of the level of commitment with quality and the environment. They applied analysis of variance and regression analysis techniques on the data set and found that commitment to quality and environmental practices has a great impact on the performance of hotels.

The majority of the researchers focused on the implementation of EMS in large hotels, while very few researchers discussed the implementation of EMS in small- and medium-sized hotels (SMHs). In Chan (2012), the researchers addressed the research gap after the investigation and analysis of the application of EMSs in the context of hospitality. They conducted a qualitative study on the basis of data fetched from three levels of employees, that is, executives, supervisors, and general staff from an international hotel, and developed an in-depth understanding of the application of EMSs in the hospitality industry. They identified four core factors in the formation stage of the hotel's EMS, which are: 1) corporate governance, 2) leading activities, 3) initial gap analysis, and 4) collaboration with external consultancy. It was observed that EMSs can help in promoting a bottom-up approach to change.

A top-down methodology for the implementation of EMSs was more appropriate for a hotel with a large number of Chinese manpower due to cultural issues. In Chan (2011), the researchers pointed out the hurdles in the implementation and execution of formal EMS in SMHs in Hong Kong. Researchers conducted an investigative factor analysis and found that five

significant factors, that is, deficiency of urgency, uncertainty of EMS standards, deficiency of qualified professionals, conflicting guidance, and unpredictable support, were hurdles in the adoption of EMS by SMHs.

Researchers discussed the actions taken by these hotels for the enhancement of their environmental performance. Value-added services also play an important role in the acquisition and retention of customer loyalty, which is considered to be one of the biggest challenges of the hospitality industry. Environmental certifications are also considered an important factor in customer retention. A large group of hotels are implementing environmental certifications for acquisition and retention of customer loyalty.

Researchers like Segarra-Ona (2012) analyzed the relationship between implementation of environmental certifications and revenue generation in the Spanish hospitality industry. They discussed the impact of moderating factors such as company size and the market segment on the business outcome. They used the empirical economic information of 2116 Spanish hotels (data gathered from SABI database) for the year 2008 (in this year, 108 properties got ISO 14001 certification). They used a qualitative analysis technique, which showed that there exists a significant difference in the revenue of ISO-certified hotels and the hotels that are not ISO certified. It was evident from the results that company size and organizational factors have a great influence on revenue.

In Blackman (2014), researchers used a novel hotel investment as a substitute to the private benefits, and fixed effects, and tendency score matching to resist the self-selection bias. The author observed that Blue Flag certification stimulates significant novel investment, particularly in luxury hotels and in economically edged clusters.

In Geerts (2014), researchers discussed three important objectives of environmental certification systems (EMSs) in the hospitality industry. They showed that environmental certifications promote the implementation of sustainability practices in the hospitality industry. Environmental certifications enhance profitability in the hotels and these certifications prove to be helpful in providing more accurate information to the guests. Researchers discussed the perception of managers about environmental certifications.

They interviewed 21 managers of London-based hotels from a group of reputed hotels and analyzed the websites of 196 hotels and found that all these goals were not achieved. Apart from that, they discussed in detail how EMSs provide knowledge to hotel owners and help against the greenwash claims.

However, the impact of environmental certifications on productivity was not fully explained. Environmental certifications also help in decision-making. In Jesus (2011), researchers analyzed environmental certification-based decision-making in two axes, that is, motivation and judgment to recognize reasons for pro-environmental behavior of the management of the Spanish Eco-management and Audit Scheme (EMAS)-certified hotels. They employed mixed approaches for studying the perception of the EMAS and reasons for certifications with existing and lapsed EMAS-certified firms enumerated against expert interviews and documentary evidence. They identified four clusters in the hospitality industry: the first cluster was the strategic hotels, which was 22% of the total hospitality industry and was found to have high levels of cohesive environmental management; the second one was named as Followers, which was 48% of the total industry population and was the largest group; the third one was named Greenwashers, which was 11% of the total industry population and it was the smallest group; and the fourth cluster was named Laggards, which was 19% of the total industry population and was found to have low levels of integrated environmental management.

The majority of the hotels were found to be internally motivated in their aim and ad hoc in their policymaking, with partial understanding of externally driven benefits and motivation for more systematic management systems. This is a question mark on the success of EMAS as nonstop improvement management and as a market-based instruction instrument for hotels. A few of the hotels connected to high environmental standards to the opportunities of gaining market benefit, the majority desired to avoid legal challenges. EMS has a great impact on the hospitality industry.

Researchers (Peiro-Signes, 2014) examined the effect of hotels with ISO 14001 EMS from a customers' point of view. They analyzed the data of customer rating for 6850 Spanish hotels. The hotels they included

in the study were a combination of hotels with ISO 14001 certifications and hotels without ISO 14001 certifications. It was revealed that customers rated high for the hotels with ISO certifications, while the hotels without ISO certifications were found to be low rated. Results were proved to be robust for hotel comfort and hotel services compared to other hotel characteristics.

Moreover, the most significant differences were noticed in expensive four-star hotels. Four-star hotels seem to achieve a distinct market advantage by environmental certifications. It was found that the management training provided by ISO 14001 can provide a competitive advantage for the hospitality industry. Apart from environmental certifications, green practices are also given due importance. Researchers (Kim, 2017) did a systematic analysis and identified research domains and formulated the definition of green practices in the context of hospitality. They reviewed 146 articles on green practices published from 2000 to 2014 in eight hospitality journals. Researchers used content to code articles using a standardized coding scheme. It was found that the number of articles on green practices is growing rapidly. Researchers identified three research domains for green practices in the hospitality literature, that is, organizational, operational, and strategic. They defined the green practice as a value-added business strategy that is beneficial for hospitality operations that engage in environmental protection initiatives.

A proposed framework can be helpful for practitioners in developing green practice strategies and for governments to develop effective green policies and reinforce activities aimed at environmental protection. It provides a theoretical foundation for future research related to green practices in the hospitality industry. Researchers created an organizational framework for a fragmented body of literature by identifying three research domains for green practices based on a systematic review of recently published articles in the hospitality industry.

Researchers (Martinez, 2018) developed a model to investigate the relationship between green practices, green image, environmental consciousness, and the behavioral intentions of customers in the context of a certified hotel. They examined the direct and moderating role of environmental consciousness in

the formation of behavioral intentions based on green initiatives. They conducted a survey on the sample size of 502 hotel customers in Spain. Findings showed that customer perceptions of green practices have a direct positive effect on a hotel's green image.

At the same time, the green image has a direct positive effect on customer behavioral intentions toward certified hotels. It was also found that the higher the environmental consciousness of the consumers, the greater their intention to stay, to spread positive word of mouth, and pay a premium for environmentally certified hotels. Environmental proactivity impacts the performance of hotels. To discuss this impact, researchers (Pereira-Moliner, 2015) analyzed the influence of environmental proactivity on cost and differentiation competitive advantage and explored the double relationship between environmental proactivity and business performance. They selected a sample size of 350 three- to five-star Spanish hotels and classified them according to environmental proactivity and performance levels. They employed a two-step cluster analysis and examined significant differences between clusters. Results showed two types of environmental behaviors, that is, reactive and proactive.

Hotels with proactive environmental behavior developed significantly better cost and differentiation competitive advantage and achieved significantly higher performance levels. Hotels that achieved above-average business performance levels were significantly more environmentally proactive. Energy saving can be considered an important factor in the success of business.

In Chan (2012), researchers discussed that hotels could save cost and improve sustainability by implementing judicious energy-saving approaches without harming guest satisfaction. In Susskind (2014), researchers provided an important knowledge basis for harnessing water-energy nexus. They used a database of 876 environmentally certified hotels globally to explore the resource usage, achieved savings, and existence of different nexuses. Results indicated that the relationship among all the three resource indicators was significant, but particularly pronounced for the water-energy nexus, and indicated an intrinsically close relationship between “water for energy” and “energy for water.”

In Becken (2017), the researchers have discussed in detail that the hotel managers adopt sustainable development practices in their establishment, given the presence of barriers to the adoption of such practices by hotel establishments and the lack of knowledge as to the ways and means by which a sustainable development orientation is developed and implemented. They used a qualitative approach to address the research questions. They discussed in detail why and how hotel managers proceed to develop and implement a sustainable development orientation, as well as the contextual factors that affect the extent to which sustainable development practices are adopted. Researchers (Prud'homme, 2016) explored three research questions related to the social and physical attributes of a firm's location with its engagement in a voluntary environmental program (VEP). They drew a sample of hotels participating in a Costa Rican VEP and found that a group of VEP-certified rivals' and firms' vicinity to a sanctified environment is positively correlated with a firm's level of VEP commitment. An interaction effect was revealed, such that the association between the number of VEP-certified rivals and the VEP engagement level is positively moderated by their firm proximity to a green location. This research aims to find insights into the articles published on the topic “The significance of environmental certifications in the hospitality industry” from 2010 to 2020 and discuss significant information about the articles.

3 Methodology

This research was conducted according to the bibliometric methodology. Scientific articles for the duration 2010–2020 using keywords “ISO 14001,” “environmental certificates,” and “green hotels” were searched on Web of Science database. Fig. 1 shows the illustration of our methodology.

Researchers used Web of Science for downloading the data set of articles. Initially, a large number of articles were downloaded. During the preprocessing step, duplicate and irrelevant articles were identified and removed. At the end of the preprocessing step, 49 articles were left, which were used for the analysis.

First of all, researchers performed descriptive analysis on research articles to find out the insights of the articles.

In this section, important insights for the articles will be discussed.

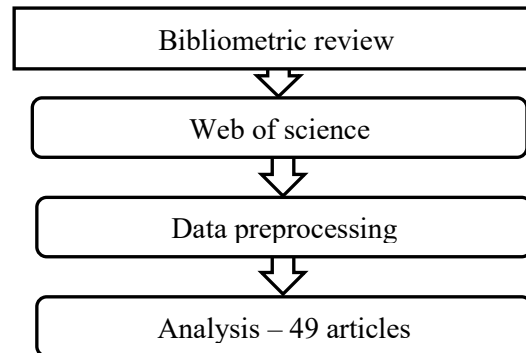


Figure 1. Illustration of methodology (*Source: Created by authors*)

3.1 Bibliometric and social network analysis

The word “Bibliometrics” was coined by Allan Pritchard in the year 1969 (Chan, et al., 2012). It is used to measure the knowledge growth with the help of research articles published by various researchers. It helps in finding significant contributions by researchers and countries in a particular research area. Apart from that, it helps in finding growth of knowledge in a specific time duration.

Social network analysis is used to identify and classify similar keywords’ nodes, authors, and institutions to evaluate the associations and relationships between them (Chan, 2008).

This helps in identifying the relationship between certain components, that is, keyword frequency, also known as co-word; authors, also known as co-authorship; and citations, also known as co-citations.

This approach aims to identify the relationship between the different components of articles.

3.2 Data collection

We used Web of Science database to collect bibliometric data for the period from 2010 to 2020. A total number of 49 articles for the last 11 years were collected and used in this research work.

3.3 Analysis method

For this research work, we used three main tools, that is, MS Excel, Histcite, and VosViewer software. MS Excel was used for data preprocessing, calculations, and graph creation. Histcite is a software used for bibliometric analysis and information visualization, while we used VosViewer for scientific mapping and clustering of the articles.

4 Results and discussion

4.1 Publications’ trend

Publications’ trend on the topic of “importance of environmental certificates for green hotel” for 49 research papers published from 2010 to 2020 has been shown in Fig. 2 and Table 1.

Articles published on the topic “Importance of environmental certificates for green hotels” from 2010 to 2020 have been shown in Fig. 2 and Table 1. It was found that the focus on the importance of environmental certificates for hotels is increasing year after year. Data shows that only a small percentage of work was published from 2010 to 2013. A drastic increasing trend in the number of publications was observed from the year 2014 onward, which shows that this topic got popularity among researchers after 2013, as most of the articles were published during this period. We can say that environmental problem increased with the modernization and got attention from researchers all over the world.

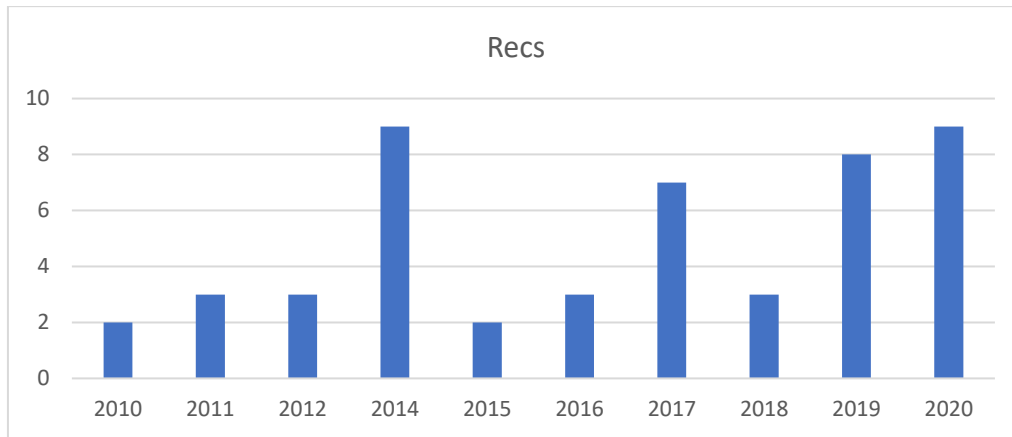


Figure 2. Publications' trend from 2010 to 2020
(Source: Created by the authors based on WoS database)

Table 1. Publications' trend from 2010 to 2020
(Source: Created by the authors based on WoS database)

Publication year	Publications
2010	2
2011	3
2012	3
2014	9
2015	2
2016	3
2017	7
2018	3
2019	8
2020	9

4.2 University citation score

Researchers considered minimum two citations as a threshold for inclusion of universities in the list of universities with cited publications.

Fig. 3 and Table 2 show the universities with their publication citation score on the topic "Importance of environmental certificates for green hotels."

It is evident from Fig. 3 and Table 2 that the research work of Cornell University, George Washington University, Hong Kong Polytechnic University, and Universitat Politecnica De Valencia was cited 14 times

in total by the researchers mentioned in the data, which indicates that these universities are striving to produce quality research in the area of environmental certifications in hospitality industry.

Other universities such as Boston, Alicante, Leeds Metropolitan, and Oxford Brookers University have a less focus on this topic, which indicates low research productivity by the universities and the need to improve the research quality.

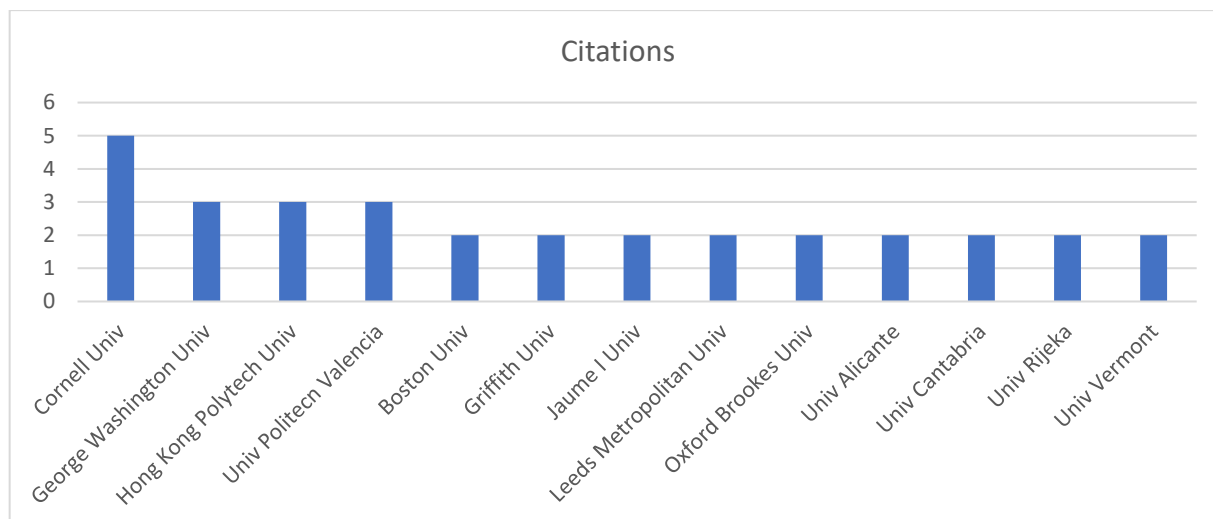


Figure 3. University citation scores (*Source:* Created by the authors based on WoS database)

Table 2. University citation scores (*Source:* Created by the authors based on WoS database)

Rank	Institution	Citations
1	Cornell Univ	5
2	George Washington Univ	3
3	Hong Kong Polytech Univ	3
4	Univ Politecn Valencia	3
5	Boston Univ	2
6	Griffith Univ	2
7	Jaume I Univ	2
8	Leeds Metropolitan Univ	2
9	Oxford Brookes Univ	2
10	Univ Alicante	2
11	Univ Cantabria	2
12	Univ Rijeka	2
13	Univ Vermont	2

4.3 Country-wise publications

Researchers considered minimum five publications as a threshold for inclusion of universities in the list of universities with publications. Fig. 4 and Table 3 show the countries with publications on the topic “Importance of environmental certificates for green hotels.”

It is evident from Fig. 4 and Table 3 that most of the publications on the topic “Importance of environmen-

tal certificates for green hotels” were by the universities of Spain and USA, which indicates that these countries are making significant research contributions in the area and are high-ranked universities in producing quality research.

Data shows that only a small percentage of the articles were published by the universities of Turkey, Chile, and Costa Rica, which indicates low research productivity by these countries and the need to pay attention toward improvement of research quality.

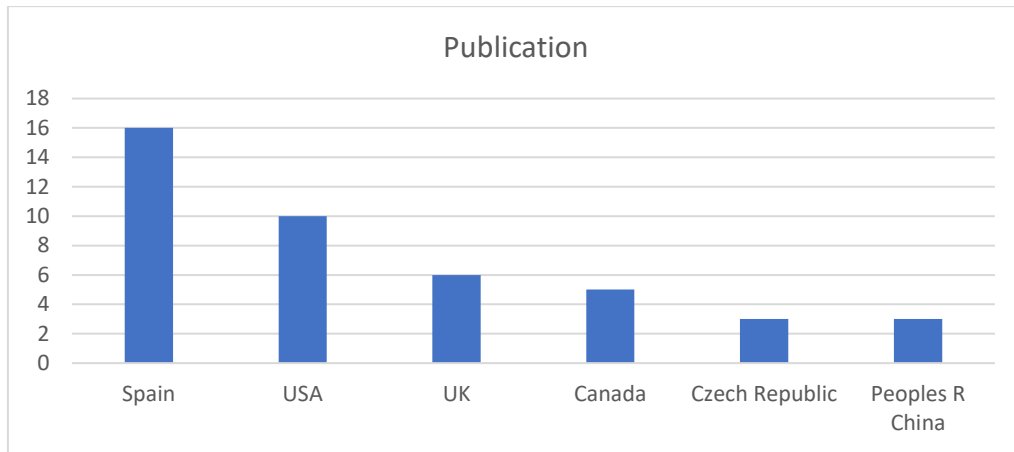


Figure 4. Country-wise publications (Source: Created by the authors based on WoS database)

Table 3. Country-wise publications (Source: Created by the authors based on WoS database)

Country	Publications
Spain	16
USA	10
UK	6
Canada	5
The Czech Republic	3
Peoples R China	3

4.4 Top author

Researchers considered minimum two publications as a threshold for inclusion of authors in the list of authors with publications. Fig. 5 and Table 4 show the universities with their publication citation score on the topic “Importance of environmental certificates for green hotels.”

It is evident from Fig. 5 and Table 4 that 20% of the articles were published by the authors Verma R., Chan E.S.W, and Rivera J., which makes them the top researchers of the area. The authors Allur E., Peiro-Signes A., Boiral O. and Zhang J.J have also contributed two publications each.

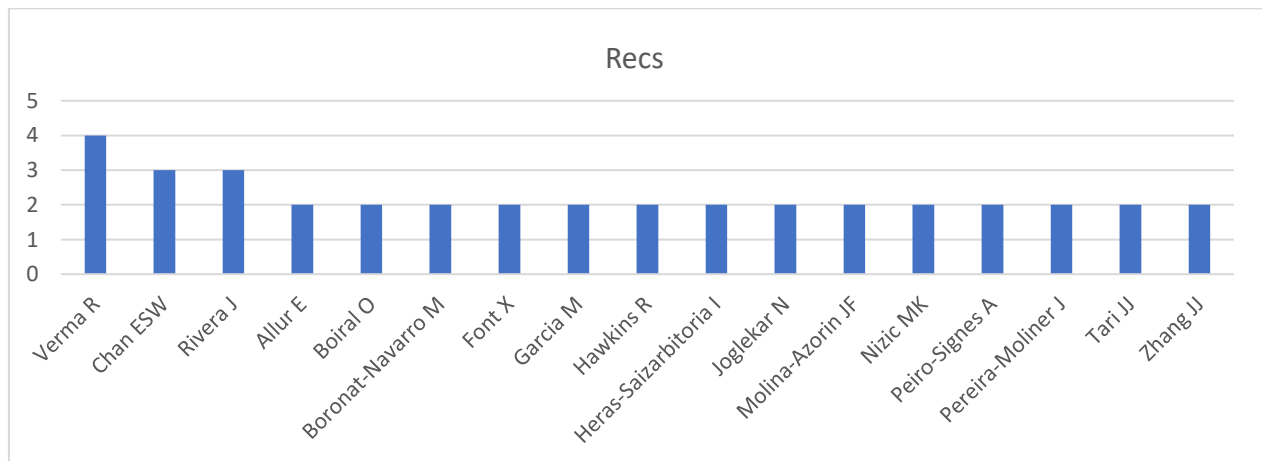


Figure 5. Publications by authors (Source: Created by the authors based on WoS database)

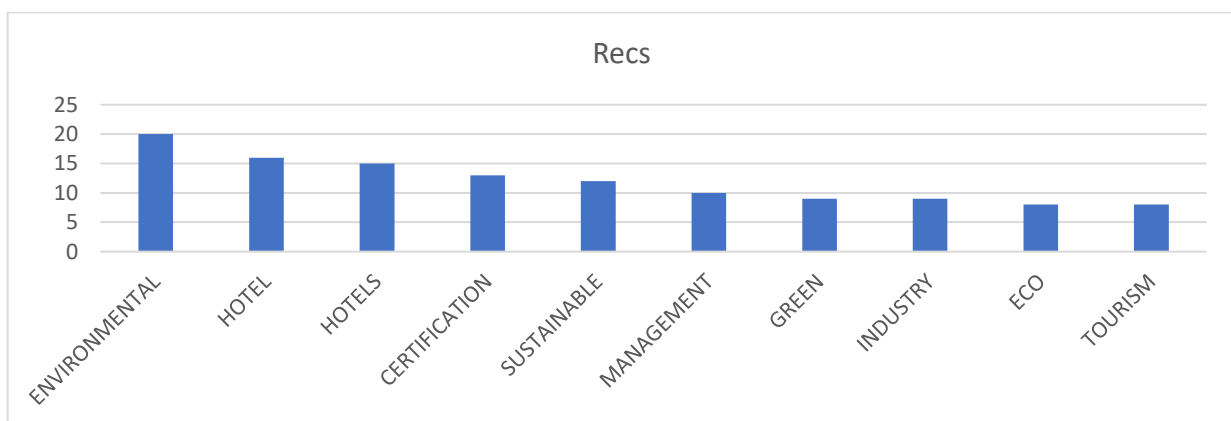
Table 4. Publications by authors (*Source: Created by the authors based on WoS database*)

Author	Publications	Author	Publications
Verma R	4	Hawkins R	2
Chan ESW	3	Heras-Saizarbitoria I	2
Rivera J	3	Joglekar N	2
Allur E	2	Molina-Azorin JF	2
Boiral O	2	Nizic MK	2
Boronat-Navarro M	2	Peiro-Signes A	2
Font X	2	Pereira-Moliner J	2
Garcia M	2	Tari JJ	2
Hawkins R	2	Zhang JJ	2

4.5 Keyword frequency

Researchers considered minimum eight frequencies as a threshold for inclusion of a keyword in the list of keywords with higher frequency.

Fig. 6 and Table 5 show the keywords with their frequencies on the topic “Importance of environmental certificates for green hotels.”

Figure 6. Keyword frequency (*Source: Created by the authors based on WoS database*)Table 5. Keyword frequency (*Source: Created by the authors based on WoS database*)

	Keyword	Frequency
1	Environmental	20
2	Hotel	16
3	Hotels	15
4	Certification	13
5	Sustainable	12
6	Management	10
7	Green	9
8	Industry	9
9	Eco	8
10	Tourism	8

It is evident from Fig. 6 and Table 5 that the keywords “Environmental,” “Hotel,” and “Certification” appeared the most among all the keywords mentioned above, which makes them the most important keywords in the articles.

Other keywords such as “Sustainable,” “Green,” “ECO,” and “Tourism” appeared less in the articles, which shows that these are the less important keywords and are less important in articles on the topic

“Importance of environmental certificates for green hotels.”

4.6 Journal popularity

Researchers considered minimum two research papers as a threshold for inclusion of a journal in the list of journals with higher popularity. Fig. 7 and Table 6 show the journals with research papers on the topic “Importance of environmental certificates for green hotels.”

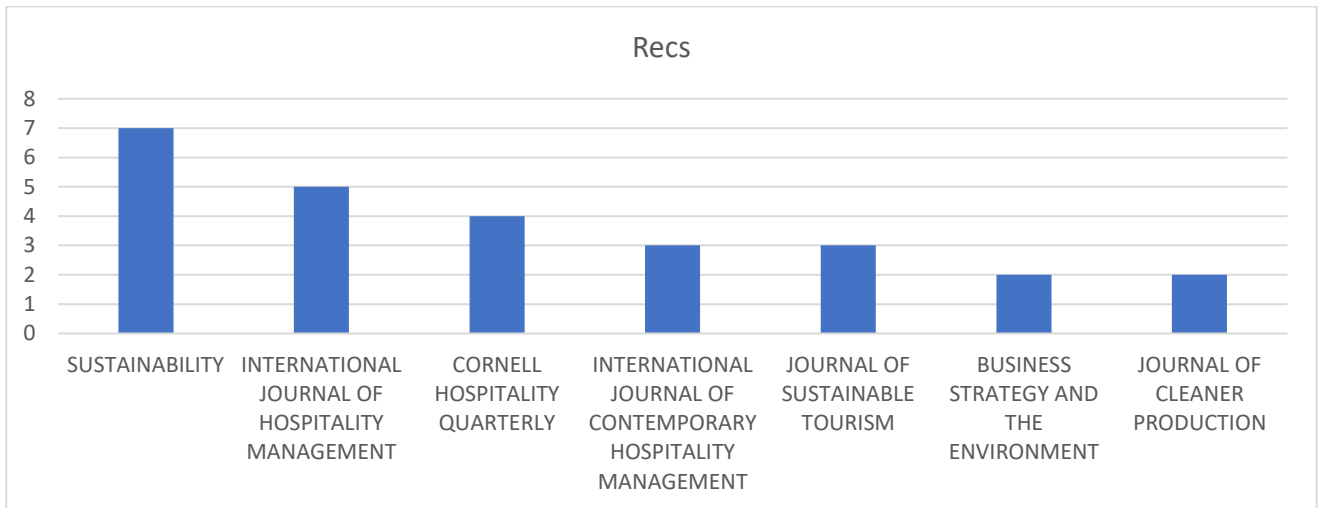


Figure 7. Journal popularity (Source: Created by the authors based on WoS database)

Table 6. Journal popularity (Source: Created by the authors based on WoS database)

Ranking	Journal	Number of articles	Q
1	Sustainability	7	Q2
2	International Journal of Hospitality Management	5	Q1
3	Cornell Hospitality Quarterly	4	Q1
4	International Journal of Contemporary Hospitality Management	3	Q1
5	Journal of Sustainable Tourism	3	Q1
6	Business Strategy and the Environment	2	Q1
7	Journal of Cleaner Production	2	Q1

It is evident from Fig. 7 and Table 6 that 32% of the articles belonged to the journals “Sustainability,” “International Journal of Hospitality Management,” and “Cornell Hospitality Quarterly,” which makes them the most popular journals in the area of hospitality management.

The rest of the articles belonged to other journals such as “International Journal of Contemporary Hospitality Management,” “Business Strategy and the Environment,” and “Journal of Cleaner Production,” which indicates that these journals are not much popular and they need to be focused.

4.7 Identifying core literature

Table 7 shows the ranking of articles from the year 2010 to 2020. It was found that article “Levels of quality and environmental management in the hotel industry: Their joint influence on firm performance” by Tari, et al. (2010), published in the journal *International Journal of Hospitality Management* was the most cited article with 102 citations, which is the highest citation count.

The article “Attitude towards EMSs in an international hotel: An exploratory case study” by Chan, et al. (2010) published in the journal *International*

Journal of Hospitality Management was cited 101 times, which is the second highest citation count.

The article “Implementing environmental management systems in small- and medium-sized hotels: Obstacles” by Chan, Eric (2011) published in *Journal of Hospitality & Tourism Research* was cited 97 times, which is the third highest citation count.

While the article “Does environmental certification help the economic performance of hotels?: Evidence from the Spanish hotel industry” by Segarra-Ona, et al. (2012), published in the journal *Cornell Hospitality Quarterly* was cited 67 times.

Table 7. Citation of articles (*Source: Created by the authors based on WoS database*)

Authors	Title	Year	Journal	Citation
Tari, J.J., Claver-Cortes, E. and Pereira-Moliner, J.	Levels of Quality and Environmental Management in the Hotel Industry: Their Joint Influence on Firm Performance	2010	International Journal of Hospitality Management	102
Chan, E.S.W., Hawkins, R.	Attitude Towards EMSs in an International Hotel: An Exploratory Case Study	2010	International Journal of Hospitality Management	101
Chan, E.S.W.	Implementing Environmental Management Systems in Small- and Medium-sized Hotels: Obstacles	2011	Journal of Hospitality & Tourism Research	97
Segarra-Ona, Maria-del-Val, Peiro-Signes, A. and Verma, R.	Does Environmental Certification Help the Economic Performance of Hotels?: Evidence from the Spanish Hotel Industry	2012	Cornell Hospitality Quarterly	67
Geerts, W.	Environmental Certification Schemes: Hotel Managers' Views and Perceptions	2014	International Journal of Hospitality Management	60
Priego, M.J.B., Najerab, J.J. and Font, X.	Environmental Management Decision-making in Certified Hotels	2011	Journal of Sustainable Tourism	60
Peiró-Signes, A., Segarra-Oña, M., Verma, R., Mondéjar-Jiménez, J. and Vargas-Vargas, M.	The Impact of Environmental Certification on Hotel Guest Ratings	2014	Cornell Hospitality Quarterly	49
Kim, S.-H., Lee, K. and Fairhurst, A.	The Review of "green" Research in Hospitality, 2000-2014 Current Trends and Future Research Directions	2017	International Journal of Hospitality Management	42

4.8 Bibliographic coupling

In order to have a clear picture of the academic background of 49 articles used in this research, researchers analyzed the articles' network. Fig. 8 illustrates the network visualization of bibliographic coupling of articles.

Fig. 8 presents the articles with the highest link strength of bibliographic coupling. Fig. 8 shows that the three studies with the highest indices of bibliographic coupling are:

- Manganari E.E., Dimara, E., Theotokis, A., 2016. Greening the lodging industry: Current status, trends and perspectives for green value. *Current Issues in Tourism*, Vol. 19, No. 3, pp.223-242.
- Kim, S.-H., Lee, K. and Fairhurst, A., 2017, The review of "green" research in hospitality, 2000–

2014: Current trends and future research directions. *International Journal of Contemporary Hospitality Management*, Vol. 29, No. 1, pp.226-247.

- Pereira-Moliner, J., Font, X., Tari, J.J., Molina-Azorín, J.F., Lopez-Gamero, M.D., 2015. The Holy Grail Environmental management, competitive advantage and business performance in the Spanish hotel industry. *International Journal of Contemporary Hospitality Management*, Vol. 27, No. 5, pp.714-738.
- Segarra-Ona, Maria-del-Val, Peiro-Signes, A., Verma, R., 2012. Does environmental certification help the economic performance of hotels?: Evidence from the Spanish hotel industry. *Cornell Hospitality Quarterly*, Vol. 53, No. 3, pp.242-256.

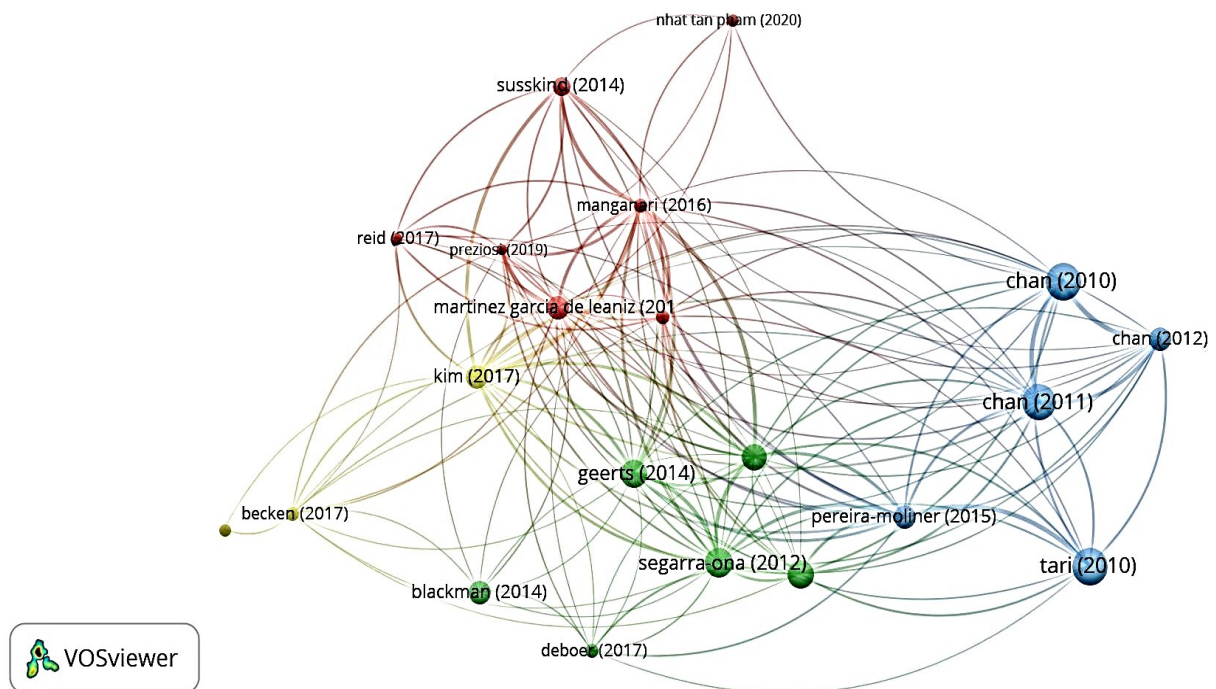


Figure 8. Network diagram for bibliographic coupling
(Source: Created by the authors based on WoS database using VosViewer software)

Trying to complete the Bibliographic coupling analysis of articles, Fig. 8 presents a network visualisation. The figure reveals four main clusters of documents that are commonly cited together. Manganari E.E., Dimara, E., Theotokis, A. (2016) has the biggest link strength and belongs to the red cluster with other articles, such as Susskind (2014), Reid (2017).

On the other hand, Kim, et al. (2017) is close to the leader in terms of bibliographic coupling and belongs to the yellow cluster, like Becken (2017). Pereira-Moliner (2015) leads the blue cluster, where we can find documents with a relevant link strength such as Chan (2010). Finally, Segarra-Ona (2012) leads the green cluster, where we can find documents with a relevant link strength such as Peiro-Signes (2014).

Verify selected documents

Selected	Document	Citations	Total link strength
<input checked="" type="checkbox"/>	manganari (2016)	14	133
<input checked="" type="checkbox"/>	kim (2017)	42	121
<input checked="" type="checkbox"/>	pereira-moliner (2015)	39	113
<input checked="" type="checkbox"/>	segarra-ona (2012)	67	97
<input checked="" type="checkbox"/>	peiro-signes (2014)	49	96
<input checked="" type="checkbox"/>	geerts (2014)	60	90
<input checked="" type="checkbox"/>	chan (2011)	97	78
<input checked="" type="checkbox"/>	chan (2010)	101	77
<input checked="" type="checkbox"/>	prud'homme (2016)	16	72
<input checked="" type="checkbox"/>	martinez garcia de leaniz (2018)	40	69
<input checked="" type="checkbox"/>	chan (2012)	38	64
<input checked="" type="checkbox"/>	preziosi (2019)	10	63
<input checked="" type="checkbox"/>	jesus bonilla-priego (2011)	60	61
<input checked="" type="checkbox"/>	susskind (2014)	28	59
<input checked="" type="checkbox"/>	tari (2010)	101	59
<input checked="" type="checkbox"/>	reid (2017)	13	31
<input checked="" type="checkbox"/>	becken (2017)	16	20
<input checked="" type="checkbox"/>	deboer (2017)	15	18
<input checked="" type="checkbox"/>	blackman (2014)	42	10
<input checked="" type="checkbox"/>	nhat tan pham (2020)	12	8

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Figure 9. Bibliographic coupling
 (Source: Created by the authors based on WoS database using VosViewer software)

4.9 Co-citations

Figs 10 and 11 identifies two main groups of cited documents in the literature. The green cluster is formed by four very relevant works cited frequently

together in our sample (Lee, Font, Manaktola, and Greets). The red group is made up of seven articles, usually cited jointly (Priego, Chan, Tzschentke, Bohdanowicz, and Segarra-Ona).

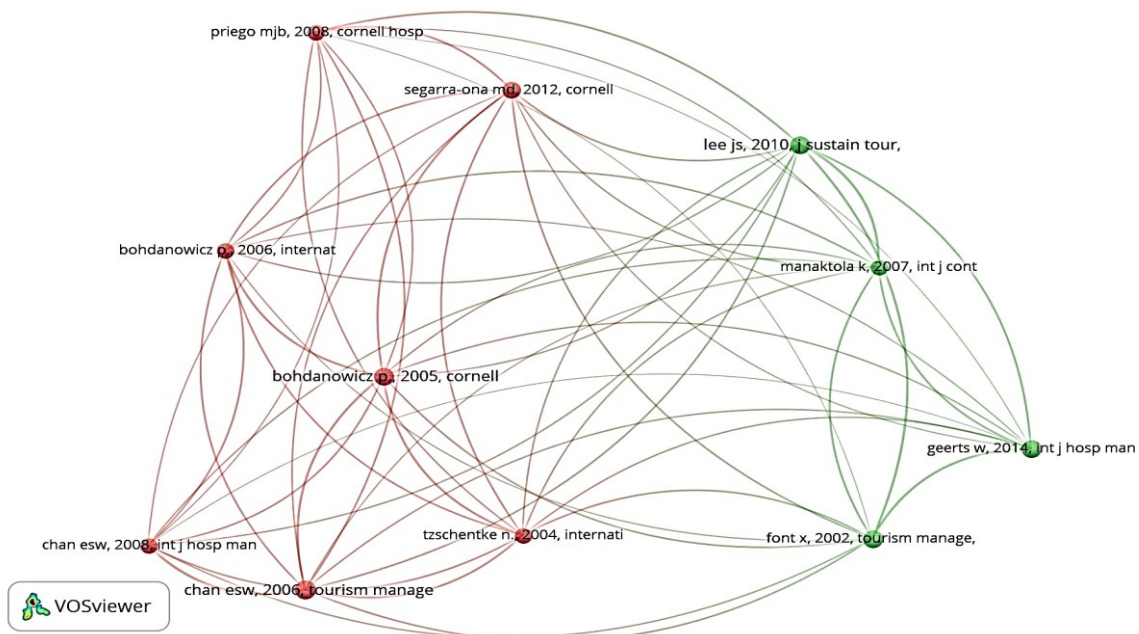


Figure 10. Network diagram of co-citations
 (Source: Created by the authors based on WoS database using VosViewer software)

Verify selected cited references

Selected	Cited reference	Citations	Total link strength
<input checked="" type="checkbox"/>	chan esw, 2006, tourism manage, v27, p481, doi 10...	14	43
<input checked="" type="checkbox"/>	lee js, 2010, j sustain tour, v18, p901, doi 10.1080/0...	13	45
<input checked="" type="checkbox"/>	bohdanowicz p., 2005, cornell hotel and restaurant...	13	43
<input checked="" type="checkbox"/>	font x, 2002, tourism manage, v23, p197, doi 10.10...	12	41
<input checked="" type="checkbox"/>	geerts w, 2014, int j hosp manag, v39, p87, doi 10.1...	12	32
<input checked="" type="checkbox"/>	segarra-ona md, 2012, cornell hosp q, v53, p242, d...	11	36
<input checked="" type="checkbox"/>	tzschentke n., 2004, international journal of conte...	10	39
<input checked="" type="checkbox"/>	manaktola k, 2007, int j cont hospitali, v19, p364, d...	10	38
<input checked="" type="checkbox"/>	bohdanowicz p., 2006, international journal of hos...	10	36
<input checked="" type="checkbox"/>	chan esw, 2008, int j hosp manag, v27, p187, doi 1...	10	34
<input checked="" type="checkbox"/>	priego mjb, 2008, cornell hosp q, v49, p381, doi 10....	10	29

< Back Next > Finish Cancel

Figure 11. Co-citations

(Source: Created by the authors based on WoS database using VosViewer software)

4.10 Authors’ network

Fig. 12 illustrates the network diagram for co-authors in the articles used in this study.

It is evident from Fig. 12 that author Verma has joint publications with Peiro-signes, Segarra-Ona, Zhang, and Joglekar, which makes him the most collaborative author. Authors Chan and Rivera have joint publica-

tions with three authors, which makes them the second most collaborative authors. Fig. 13 shows that publications of Chan were the most cited, which shows that the author maintains a high-quality research standard. Majority of his articles were published in International Journal of Hospitality Management, which makes this journal the top journal in hospitality management.

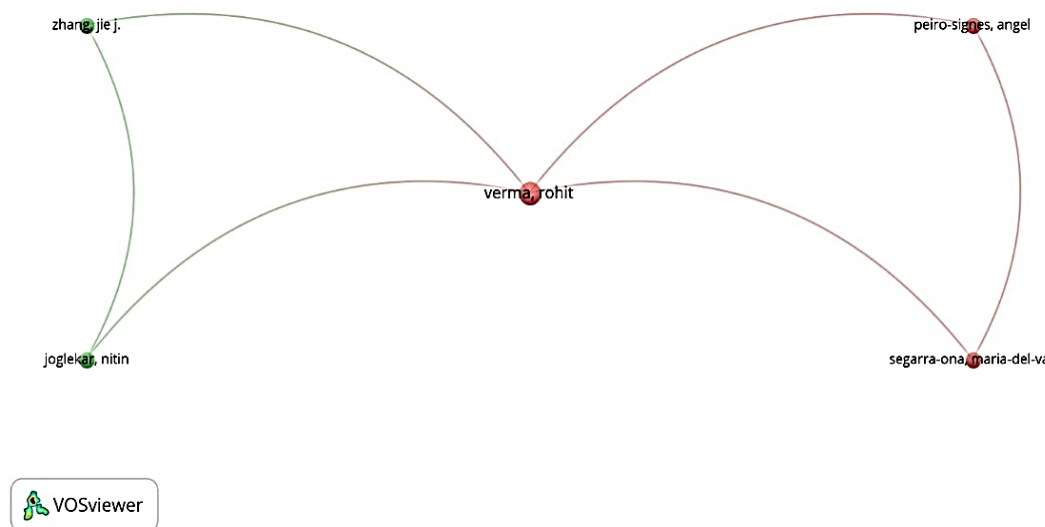


Figure 12. Co-authorship

(Source: Created by the authors based on WoS database using VosViewer software)

Verify selected authors

Selected	Author	Documents	Citations	Total link strength
<input checked="" type="checkbox"/>	verma, rohit	4	129	8
<input checked="" type="checkbox"/>	allur, erlantz	2	8	6
<input checked="" type="checkbox"/>	boiral, olivier	2	8	6
<input checked="" type="checkbox"/>	garcia, maria	2	8	6
<input checked="" type="checkbox"/>	heras-saizarbitoria, inaki	2	8	6
<input checked="" type="checkbox"/>	joglekar, nitin	2	13	4
<input checked="" type="checkbox"/>	peiro-signes, angel	2	116	4
<input checked="" type="checkbox"/>	segarra-ona, maria-del-val	2	116	4
<input checked="" type="checkbox"/>	zhang, jie j.	2	13	4
<input checked="" type="checkbox"/>	molina-azorin, jose f.	2	140	3
<input checked="" type="checkbox"/>	pereira-moliner, jorge	2	140	3
<input checked="" type="checkbox"/>	chan, eric s. w.	3	236	2
<input checked="" type="checkbox"/>	font, xavier	2	99	2
<input checked="" type="checkbox"/>	hawkins, rebecca	2	139	2
<input checked="" type="checkbox"/>	boronat-navarro, montserrat	2	5	0
<input checked="" type="checkbox"/>	nizic, marinela krstinic	2	3	0
<input checked="" type="checkbox"/>	rivera, jorge	3	57	0

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Figure 13. Co-authorship

(Source: Created by the authors based on WoS database using VosViewer software)

4.11 Keyword co-occurrence

Fig. 14 illustrates the network diagram for keyword co-occurrence of the articles used in this research, while Fig. 15 shows the table for keyword co-occurrences.

It is evident from Figs 14 and 15 that the keyword “environmental certification” has the strongest link

with a frequency value of 19, which shows that “environmental certification” is the most frequent keyword in the articles used in this research. “Sustainability” and “tourism” were found to be the second strongest keywords with frequencies of 15 and 17, respectively. Keyword “corporate social-responsibility” was found to be the keyword with weakest link strength.

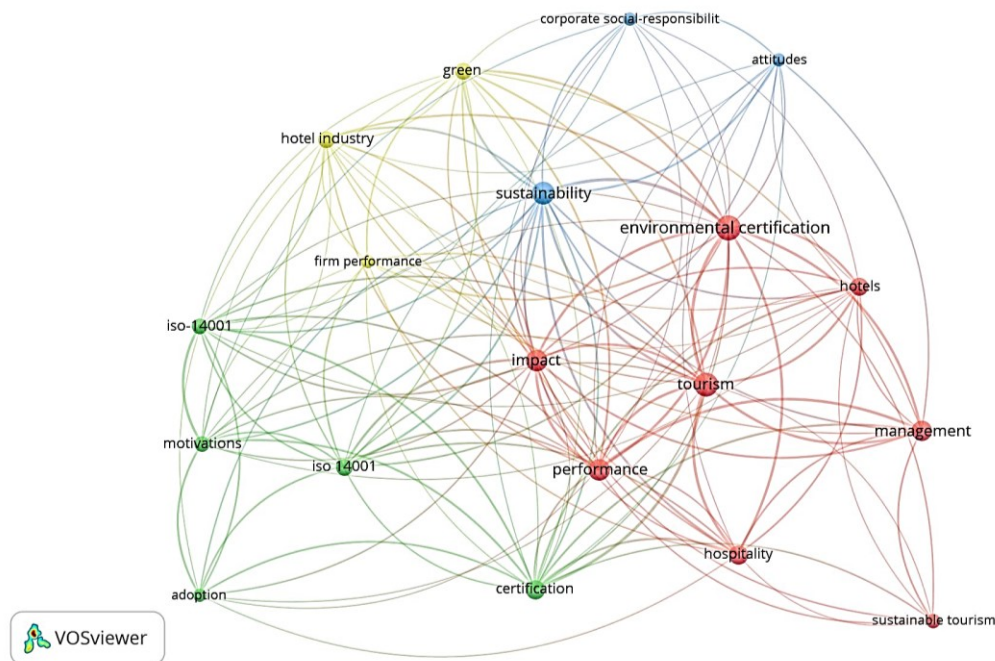
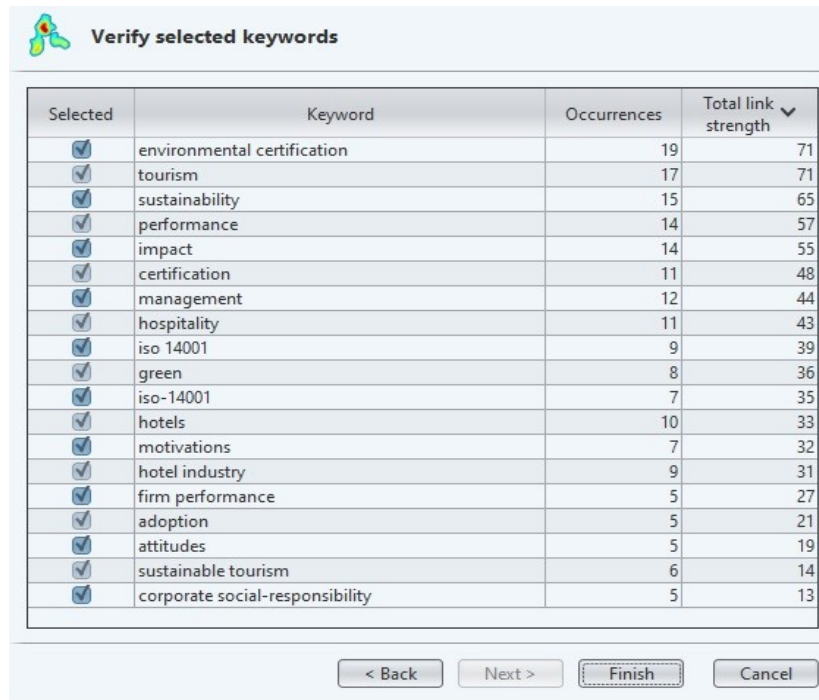


Figure 14. Network diagram for keyword co-occurrence

(Source: Created by the authors based on WoS database using VosViewer software)



Selected	Keyword	Occurrences	Total link strength
<input checked="" type="checkbox"/>	environmental certification	19	71
<input checked="" type="checkbox"/>	tourism	17	71
<input checked="" type="checkbox"/>	sustainability	15	65
<input checked="" type="checkbox"/>	performance	14	57
<input checked="" type="checkbox"/>	impact	14	55
<input checked="" type="checkbox"/>	certification	11	48
<input checked="" type="checkbox"/>	management	12	44
<input checked="" type="checkbox"/>	hospitality	11	43
<input checked="" type="checkbox"/>	iso 14001	9	39
<input checked="" type="checkbox"/>	green	8	36
<input checked="" type="checkbox"/>	iso-14001	7	35
<input checked="" type="checkbox"/>	hotels	10	33
<input checked="" type="checkbox"/>	motivations	7	32
<input checked="" type="checkbox"/>	hotel industry	9	31
<input checked="" type="checkbox"/>	firm performance	5	27
<input checked="" type="checkbox"/>	adoption	5	21
<input checked="" type="checkbox"/>	attitudes	5	19
<input checked="" type="checkbox"/>	sustainable tourism	6	14
<input checked="" type="checkbox"/>	corporate social-responsibility	5	13

Figure 15. Keyword co-occurrence table

(Source: Created by the authors based on WoS database using VosViewer software)

5 Conclusion

An increase in the number of article publications shows that the topic “Importance of environmental certificates for green hotels” is getting popular among researchers with every passing year. Majority of the journals have articles with a large number of citations, which indicates that they are high-quality journals. The results indicate that Cornell University, Hong Kong Polytechnic University, George Washington University, and Polytechnic University of Valencia are the institutes producing high-quality research work, as 28% of the researchers cited the articles published by the researchers of these universities.

Results indicate that universities of Spain and USA are the largest contributors, as they have published 52% of the total articles in the area under this study. Spain and USA are considered to be the world superpowers; their interest in this area of research unveils the importance of topic. The authors Verma, Chan, and Rivera are the core researchers of this area, as they published 20% of the overall articles discussed in this study, which makes them the gurus of the research area.

It is evident from the research that the keywords “environmental certification,” “tourism,” and “sustainability” appeared the most among all the keywords used in the articles, which makes them the most significant keywords for this area. Also, 44% of the articles used in this research were published in the journals “Sustainability,” “International Journal of Hospitality Management,” “Cornell Hospitality Quarterly,” “International Journal of Contemporary Hospitality Management,” and “Journal of Sustainable Tourism,” which makes them the most popular journals in the area under research.

The study may have some limitations; for example, the researcher might miss to include some useful articles in research. In this research, the researcher used Web of Science database as the main database, while some other databases were also used, which might involve low-quality data set for conducting analysis.

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10-12 December, 2021
Barcelona, Spain

7. Factors Motivating Customers to Pay More for Staying in Green Hotels

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Abstract

The tourism industry seems to have taken a shift to make their present operations green mainly considering the rising demands of the customers for eco-friendly products and services. This piece of paper is concentrated to address one of the most significant trends observed in the hotel industry that is to gauge customers' willingness to spend a higher amount for staying at green hotels. The essence of this paper is to uncover the different factors that can serve as a motivational force for customers to give preference for staying at green hotels rather than conventional hotels. A major issue that green products/services are usually exposed to comprises the high prices that somehow serve to curb customers' purchasing power. However, this study has adequately highlighted that today's customers are highly considered to be eco-conscious and they don't bother paying a premium amount in return for witnessing green practices undertaken by the hotels. A qualitative study has been incorporated in this study and all the relevant information has been extracted from different secondary sources that comprise research articles and credible websites to adequately support the claims made in this research. The findings of the study proclaimed that the rising environmental awareness has played a crucial role in influencing customers' behavior to allot a greater chunk of money for availing the services of green hoteling. Lastly, the implications part of the study highlights that the green practice adopted by the hotel sector yields favorable outcomes for both the hotel sector and the customers.

Keywords: tourism sector; green hotels; environmentalism; willingness to pay premium; green practices

10-12 December, 2021
Barcelona, Spain

1. Introduction

“Going green” has gained much momentum in the present era and has been incorporated by organizations as a major aspect to enhance their business model in order to resonate well with the growing customer’s demand for sustainable options (Jhavar, et al., 2012). It can be affirmed that the hospitality sector has faced unprecedented growth over a couple of years as a result of enhanced customer purchasing power followed by the respective country’s strong economic growth and the strong adherence towards digitalization and innovation. As of 2019, it has been adequately stated that there exist more than 700,000 resorts and hotels worldwide. Moreover, the tourism industry is deemed as one of the fastest-growing industries across the globe, where the travel and tourism sector contributes about 10% of the world’s entire GDP (Gilbert, 2021).

Green travel seems to have taken the limelight in the present era. In 2016, more than 36% of the customers have shown their preferences for opting for eco-friendly hotels and this demonstrates how much pertinent it has become for the entire hospitality sector to incorporate sustainable options in their business model. It is now considered to be imperative for the hotel sector to pay enough emphasis on coming up with novel ways to reinforce the creation of a safe environment, as the customer's demand for eco traveling is expected to surge predominantly in the years to come. Millennials that are undeniably called the backbone of the travel industry have shown their preferences for spending extra bucks on hotel services that incorporate environment-friendly options in their business model for creating a positive environmental impact (Hallstrom, 2021).

Going green doesn’t only serve as beneficial for laying the foundation of a sustainable environment, rather by utilizing the green technology, hotels can save their operational costs in the long run and come up with better innovative methods to perfectly appeal to the environmentally-conscious customers located all across the globe. Obtaining green energy certifications seems to be the new avenue for the hotel sector in reinforcing the traveler’s confidence and trust towards the hotels adhering to sustainable measures (Shoes For Crews Europe, 2021).

2. Purpose of the study

The purpose of the study is concentrated to determine novel ways that reflect customers’ willingness to spend more on selecting green hotels for their staying purposes. It is proclaimed that the hotel sector contributes around 60 million tons of CO₂ emissions annually. These emissions can further serve as a cause for volcanic disruptions and global warming that would ultimately result in misbalancing the world’s ecological system. This situation can be countered back by deploying green practices that would ultimately serve in reducing emissions by a gigantic 10 percent followed by saving 8.47 billion kwh/year and 65.7 billion gallons of water/year. Not only can this but a bunch of astounding benefits be derived if the hotel sectors start incorporating green practices in their business model such as scoring well on meeting the

10-12 December, 2021
Barcelona, Spain

customer's rising demands for sustainable measures resulting in establishing superior image and reputation of hotels in the long run (McCormick, 2012).

A major chunk of this paper is directed to understand the various factors that can be leveraged to instigate customers to spend a greater proportion of their income for staying in green hotels that seems to be the new norm for the creation of an environmentally safe environment.

Knowing that the global environment is hit by a number of problems comprising of ozone depletion, air pollution, global pollution, and waste disposal, customers now seem to be more receptive and conscious while making their decisions concentrated at minimizing the activities that can serve in damaging the environment (DAGHER & ITANI, 2014).

Thus, the underlying reason behind this piece of work is to gauge the factors that serve to measure the willingness of customers allotting a greater budget on staying in green hotels.

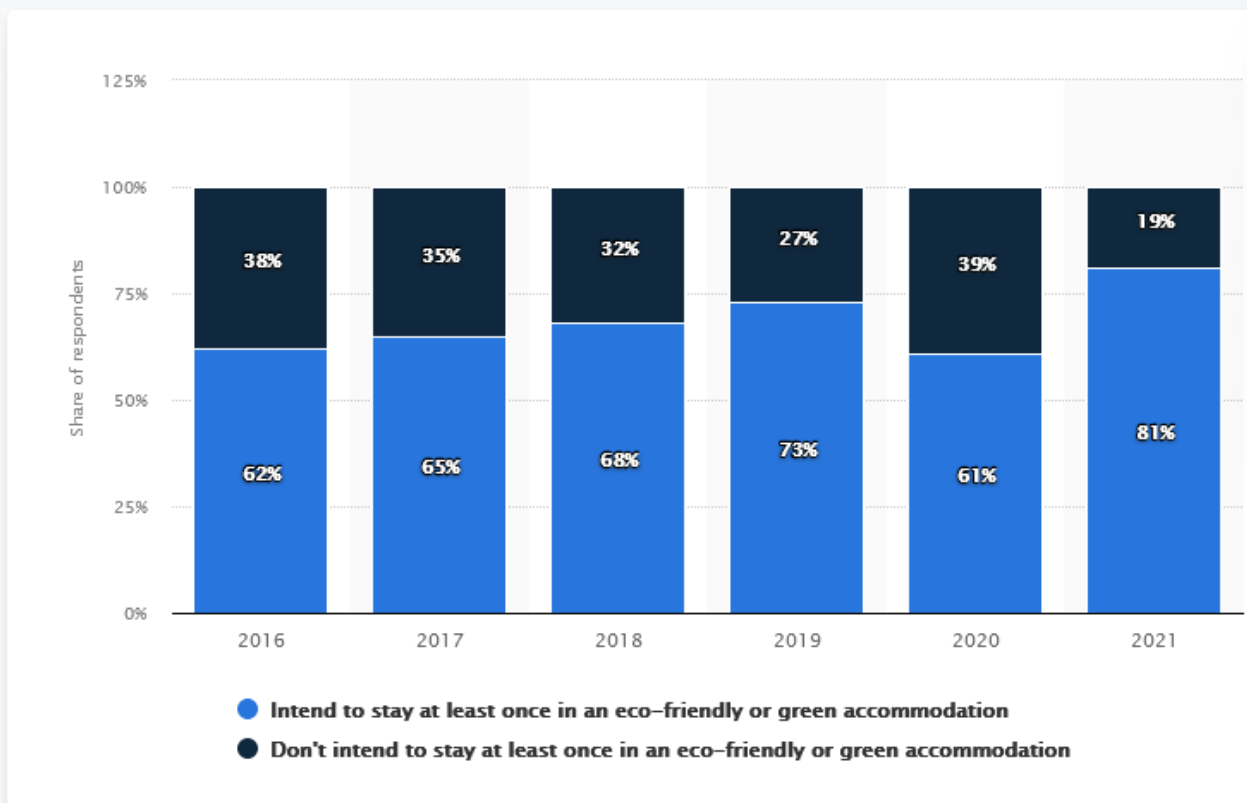
3. Literature review

The concept of Environmentalism holds vital significance amongst the customers mainly motivating them to lay the foundation of green alternatives. It has been observed when organizations residing in the hotel sector, explicitly state their views on environmental conditions and issues, they are able to motivate customers to spend a greater chunk of their income to avail the services of a green hotel alongside establishing a greater brand image in the minds of the customers. Apart from this, studies that are highly concentrated towards imparting awareness regarding the environmental situations have been shown to positively impact customers' attitudes and preference for opting for hotels reinforcing sustainable operations. Word of mouth recommendations is also considered to be a major factor in influencing customer's attitude to opt for sustainable hotels such that when environment-friendly customers refer other people regarding the green practices adopted by other hotels, customers are motivated enough to follow such authentic recommendations alongside paying a premium to avail services of such eco-friendly hotels (Jhawar, et al., 2012).

It has been observed that in instances where the hotels qualify to obtain eco-certification serving to reflect the hotel's initiatives taken for the betterment of the environment, customers seem to get highly impressed with such certification program followed by exclaiming their willingness to pay a premium to avail the services of such eco-certified hotels. Not only will the customers get motivated to spend their leisure time availing the services of such an ecofriendly hotel, but this strategy is assumed to work optimally well for the hoteliers too as they are expected of holding a competitive advantage over the non-certified hotels. Also, customers don't mind spending extra bucks on such eco-friendly hotels mainly because they obtain a fair degree of the idea that their given cost is well-utilized in coming up with novel environmentally safe operations and activities throughout the hotel (Jhawar, et al., 2012).

10-12 December, 2021
 Barcelona, Spain

Figure 1: Global travelers intending to stay at least once in a green accommodation



Source: (Statista, 2021).

The graph given above highlights the percentages of the customers who intend/do not intend to stay at least once in an eco-friendly accommodation from the period 2016 to 2021. It can be easily observed that 62% of the customers intended to enjoy eco-friendly hotels in 2016. From 2016, a drastic change can be observed where customers' preferences for staying in environment-friendly hotels increased dramatically to 65%, 68%, 73%, 61%, and 81% respectively in between the years 2017-2021. On the contrary, the graph for the customers that don't intend to even stay once at eco-friendly accommodation faces fluctuations with only 19% customers showing unwillingness to stay in eco-friendly accommodation. Thus, the above graph adequately signifies that green hoteling has gained immense popularity in recent years and further demonstrates customers' preferences explicitly. It can be well-asserted that the trend for opting for green accommodation is likely going to face an increasing demand in the years to come because greater attention is now paid by customers to select destinations that minimize the presence of harmful effects on the environment (Statista, 2021).

10-12 December, 2021
Barcelona, Spain

Customers' self-interest in opting for green solutions is another major factor that can be leveraged on motivating them to prefer environmentally friendly hotels. When customers hold a sense of commitment to ensure they opt for hotels that wouldn't result in environmental degradation, they are expected to show a higher degree of willingness to pay for hotels that guarantee optimum sustainable practices. Moreover, customers that can consider themselves to be a strong advocate of being more environmentally conscious don't mind spending lump-sum to live in green hotels and this constitutes to be a major factor in uplifting their morale to select such sustainable hotel options. Apart from this, it has been observed that strong academic background has also been linked with yielding customers' willingness to spend a greater chunk of their income on hotels that strongly confirm green practices. The underlying assumption given to support the notion pertains to the fact that as much as an individual customer possess a higher level of education, it appears that he owns more awareness regarding environmental sustainability and yet this customer will show no hesitation in paying higher costs to such hotels that conforms with the idea of following green practices with the prime objective of ensuring safety for the future generations. Thus, it can be well asserted that environment awareness plays a significant role in rousing interest amongst the customers to opt for green hotels without bothering much about the costs they are required to pay (Gan & Nuli, 2018).

Trust is considered to be a major driver of influencing customers' attitudes to patronage green hotels. When customers are ensured that the respective green hotel abides by all the necessary environmental protection rules and regulations followed by witnessing that the hotel actively participates in carrying out effective engagement activities directed to reinforce the environment's betterment, customers undeniably get attracted to such initiatives and they tend to demonstrate increased willingness to pay to avail the services of such green hotel to ensure they play a major part in making the environment safe and secure for other individuals located all across the globe. Thus, in a nutshell, it can be adequately stated that trust acts as a major factor to determine the customer's willingness to pay a premium for availing the services of green hotels (Yadav, Balaji, & Jebarajakirthy, 2018).

The increased use of terms such as "green consumerism" and "ethical consumerism" has served to play an important role in increasing the demand of the customers to select more sustainable options when deciding on the production, processing, and resourcing of the products. Not only this, but customers are assumed to get highly attracted to hotels that follow a zero-tolerance policy of damaging the environment, thus enabling them to experience the green practices undertaken by the hotels without minding paying a higher amount (Chan, 2014).

It has been largely perceived that the hotel sector plays a prominent role in adding to environmental pollution. Considering that it might lead the world to undergo a disastrous situation, there seems to be an unprecedented demand put forward by customers for green hoteling. It's a known fact that today's customers possess sufficient knowledge regarding the importance of holding a sustainable environment and to ensure that they make sufficient contribution to reducing the adverse impact that can be posited by the environment, customers tend to get motivated by extending increase willingness to pay a premium to ensure they don't

10-12 December, 2021
Barcelona, Spain

play any role in harming the environment. This self-consciousness on the customer's part works well in extending a favorable attitude from their side to allot a greater budget on green hoteling. By selecting eco-friendly hotel options, customers are largely driven by the thoughts of making a fruitful contribution to reducing environmental pollution, thus, making things convenient for the unborn generation (Demir, Rjoub, & Yesiltas, 2021).

A major force that can play an efficient role in influencing a customer's motivational level to select green hotels can be gauged from their past experiences. When a particular customer has a pleasant experience at a particular hotel following green practices, it is said to create a positive impact on that person's travel intentions. The customers are likely to be motivated to revisit such hotels as they are quite familiar with the green practices implemented by the hotels. This satisfying past experience possessed by a customer can instigate him to reconsider eco-friendly hotels while he's on an expedition, thus being least bothered even when he's required to pay a premium amount. It has been proclaimed that when customers witness hotels following an environment-friendly approach, they don't mind paying higher prices to avail the services of such green hotels. A study conducted by Dalton et al. (2008), demonstrated that almost half of the tourists while being interviewed in an Australian showed their complete willingness to pay extra money with the prime objective of getting entitled to green services. These customers showed their support in paying 5-20 % extra money to hotels that conformed to the environmental regulations and not only constrained by this, but hotels that religiously follow green practices are said to establish a greater brand image in the minds of the customers that adequately serve well in motivating them to give more preference to the green hotels over the conventional hotels (Chang, Hsiao, Nuryyev, & Huang, 2015).

It can be well asserted that green hotels and initiatives are now considered to be the new norm of the ever-growing tourism industry and factors like environmental awareness, self-consciousness, increased demand for hotel's eco-certification and a bunch of other attributes play a prominent role in convincing customers to pay a decent amount to ensure that they effectively play their part in holding a sustainable environment for the present and the future generations.

In a nutshell, it can be asserted that customers are now becoming increasingly involved in the process of selecting environment-friendly options during their travel journey. The survey conducted by Booking.com in 2019, proclaimed that a gigantic amount of 73% of travelers showed their preferences for staying at eco-friendly hotels, this is a five percent increase as compared to the previous 68% observed in 2018. Not only constrained by this, but it has been witnessed that customers now are more receptive towards such hotels that incorporate green practices in their business model in order to play their part in promoting environmental well-being (T.M, Kaur, Bresciani, & Dhir, 2021).

10-12 December, 2021
Barcelona, Spain

4. Methodology

The genre of this conference paper is to state the factors that serve to motivate customers to pay more for green hoteling rather than the traditional or the conventional hotels. A qualitative type of study has been incorporated into this research paper that focuses on collecting, analyzing, and interpreting non-numerical data (McLeod, 2019). This qualitative nature of data is deployed in this research that aims to observe and study the various factors that can serve to motivate customers to pay a higher amount for staying at green hoteling.

The data has been collected from multiple secondary sources with the prime objective to back the evidence that supports the notion of customers preferring green hoteling over conventional ones. The secondary sources aim to extend second-hand information to the researcher to assist them mainly with their given research topic effectively and efficiently. The secondary sources consist of information that can be made accessible through research articles, informative websites, blogs, and academic books (Streefkerk, 2018).

Secondary sources are usually utilized in research because of their authenticity in explicitly describing and interpreting the information in a meaningful manner. For this particular research paper, the majority of the data has been collected through secondary resources that advocate using credible journal articles and websites to better explain the phenomenon of factors that motivate customers to pay premiums to go green when it comes to hoteling. It is ensured that all the information gathered from these research articles and websites are from the last 10-12 years to ensure maintaining the credibility of this research paper. All the relevant references and credits have been given to the original authors that have served to provide meaningful insights for this paper in order to avoid traces of plagiarism. Apart from this, all the work cited has been taken from credible resources to maintain the aspect of authenticity thorough out this paper. The different secondary sources comprising of research articles, websites, and documents from the website were well utilized in this research paper to adequately explain the phenomenon of the factors that serve to instigate or motivate the customers to pay a premium while selecting green hoteling which has gained immense popularity in today's era.

Thus, the use of qualitative research and secondary sources in the form of research articles, websites serves to be the major elements of methodology incorporated for this research paper that aims at understanding the factors that can serve to motivate online customers to pay a premium for staying in green hotels.

10-12 December, 2021
Barcelona, Spain

5. Findings

The essence of this paper was to gauge the factors that can serve to motivate online customers to pay more for staying in green hotels. Throughout this piece of work, different factors were highlighted that demonstrates customers' willingness to pay higher for staying at eco-friendly hotels rather than the conventional hotels that serve in playing a major role in damaging the environment in the long run.

The study conducted by Jhawar, et al., (2012), opined the idea that with the rise in environmental awareness amongst the public, customer's preferences have now shifted to incorporate more sustainable options in their lives and industries now witness a growing demand for green products and services by the customers end. In this regard, this study stated that the hotel industry which is undoubtedly deemed as one of the fastest-growing industries in the world aims to incorporate green practices in their business model in order to obtain a competitive advantage over the competitors. For this, the study elaborated on the importance of obtaining eco-certifications for hotels that serve as one of the most crucial motivating factors for customers to spend extra money so that they are able to play their part in minimizing the environmental issues to a great extent.

Another motivating factor that appeals to customers' willingness to pay higher for staying in green hotels pertains to the fact that customers' self-interest is increasingly more towards opting for sustainable hotel options. In this regard, the study conducted by Gan & Nuli, (2018) demonstrated that millennials were willing to pay more to hotels that adopted green practices in their business model. Moreover, when these hotels through their green practices educate their customers it is likely to resonate well with customers' self-interest and hence they won't mind paying a premium to stay in green hotels.

Numerous factors can serve to motivate customers to demonstrate their willingness to pay a premium for staying at green hotels and in this regard, a viable factor that instigated customers to opt for green hoteling was related to understanding the customer's past experiences with such hotels. In a study conducted by Chang, Hsiao, Nuryyev & Huang, (2015) it was proclaimed that when customers are satisfied with their past experience at a green hotel, they are likely to revisit such green hotels and avail their services again to reap the benefits and for this satisfying experience, the customers show their willingness to pay a premium to such green hotels.

Thus, the findings of the research paper support the notion that customers are now ready to pay higher prices for staying in green hotels considering that this trend has gained much-needed importance in the present era. The term sustainable travel has started receiving much limelight and around 46% of the travelers have extended their support in opting for green hotels and choosing other eco-friendly accommodations in order to effectively counter back the environmental issues that might make life difficult for future generations. As of 2018, it has been witnessed that the travelers have shown their consensus in staying in eco-friendly accommodations and this figure has drastically improved as compared to the values of 62% and 65% observed in 2016 and 2017 respectively. Though cost is considered to be one of the

10-12 December, 2021
Barcelona, Spain

major issues that hinder the ability to promote green hoteling, however, it has been witnessed that around 67% of the customers or the travelers now show their willingness to spend 5% more on their traveling activities with a prime objective to ensure that they play a major role in minimizing the negative impact on the environment that can be posed by the conventional hotels (Tore, 2018).

6. Conclusion

Green lodging holds predominant importance in today's era where continuous efforts are deployed by businesses to avoid environmental degradation. Customers are now considered to be more eco-conscious as compared to the past years and this can be supported considering that customers' demand for sustainable products, services, and options has risen considerably. Sustainability has undoubtedly become a core aspect in the hospitality sector and a survey conducted in 2017, demonstrated that 19% of travelers showed their willingness to spend extra on traveling purposes in order to avail the services of green resorts (Bradley, 2019).

It has been witnessed that the astonishing growth of the hotel industry has raised sufficient concerns for environmental degradation where the hotel practices have been largely linked to negatively affecting the environment mainly attributed to energy and water wastage. Therefore sustainability is now considered to be a major pursuit for the hospitality sector. It is imperative for the hotel industry to ensure integrating sustainable methods and operations in their business model so that they are able to score well on meeting customers' rising demands for sustainable products.

The purpose of this paper was to gauge the factors that can serve to motivate customers to pay more for staying at green hotels. A qualitative study has been incorporated into this research and secondary sources have been utilized to collect the relevant data and information that are needed to draw conclusions about the factors that can serve to instigate online customers to pay a premium for availing the services of the green hoteling.

The findings of this research paper revealed that there exists a range of numerous factors that demonstrate greater willingness extended by the customers for staying at green hotels. The concept of environmentalism and other environmental awareness activities has served to play a pivotal role in influencing customers to opt for sustainable solutions without showing much reservations on the costs that are entitled to pay. When customers become receptive to the fact that they can contribute to minimizing the harmful effects on the environment through making sustainable choices, they are assumed to get motivated to show greater willingness to pay for green hoteling (Jhawar, et al., 2012). Customers' self-interest towards making sustainable choices serves to be another alarming factor that can serve to motivate them to select eco-friendly hotel options. It has been observed that when customers know that a particular hotel follows green practices throughout its business model, they are likely to show greater commitment towards that particular hotel and exhibit greater willingness to pay more for such green hotels (Gan & Nuli, 2018). Apart from all these, factors like trust and terms comprising of green consumerism and ethical consumerism also serve to play a pivotal role in influencing

10-12 December, 2021
Barcelona, Spain

the spending pattern of the customers. This implies that when customers are aware of the different green practices adopted by a particular hotel, they are expected to exhibit a positive attitude towards such holds and considerably increase their spending pattern to ensure that they are effectively playing their part in protecting and securing the environment followed by spending their money at places that vouches for minimizing the harmful effects on the environment (Chan, 2014; Yadav, Balaji, & Jebarajakirthy, 2018).

Thus, it can be asserted that the importance of preferring green hotels cannot be understated in today's era where businesses and consumers highly conform to abide by the environmental laws. As per the statistics, 61% of global travelers intend to select an eco-friendly accommodation at least once in their life that adequately highlights the importance of green hoteling in today's era (Statista, 2021). Lastly, it has been witnessed that customers now exhibit greater willingness to spend on availing the services of green hoteling such that the Eurobarometer investigation conducted in 2014 demonstrated that the European member states show 75% preference on paying more for eco-friendly products and services (He & Deng, 2020). Not only the European member states have shown their consensus in paying a premium for eco-friendly products but it has been witnessed that customers are willing to spend 5-20 percent extra money on hotels that abide by the environmental rules and regulations (Chang, Hsiao, Nuryyev, & Huang, 2015).

7. Implications

This research was conducted to know the factors that tend to motivate customers to pay more for staying at green hotels. In this regard, several factors have been highlighted above that reflect customer willingness to pay higher amounts for availing the services of green hotels. This research has implications for both customers and hotels.

When the hospitality sector aims to incorporate green practices in their business model they are expected to yield a considerable number of benefits. By implementing sustainable methods, hotels can improve and enhance the resource efficiency that would serve to provide them adequate savings pertaining to water and energy-related matters. Secondly, when hotels project an environmentally sustainable image of their hotels, this is expected to resonate well with their customers and further appeal to them to try out the particular hotel's services. By adequately appealing to the customer's demands of opting for sustainable solutions, the hotels can effectively deploy certain strategies that would serve to enable them to get hold of their customers in the long run. By adhering to the eco-friendly measures, hotels can considerably witness limiting or minimizing the negative effects their operations generate on the environment and this would automatically let the hotel sector uphold a sustainable image amongst their customers and other valuable stakeholders. Moreover, when hotels obtain eco-certification, they tend to showcase the transparency and visibility of their operations that would eventually lead them to establish a favorable image in the minds of the customers. Thus to conclude, it can be adequately stated that when hotels incorporate green practices in their business operations they are likely to save their costs on several expenditures followed by

10-12 December, 2021
Barcelona, Spain

generating a strong brand image in the minds of their customers (Navarro & Pérez-Aranda , 2020).

On the other hand, customers that prefer to pay high amounts for green hoteling are also entitled to receive numerous benefits. Firstly, when customers give preference to green hoteling over conventional hotels they actively contribute towards reducing environmental degradation as the hotel abiding by the green principles would not harm the environment as much as any conventional hotel would. Secondly, today's customers are highly regarded to give preference to sustainable products and services. The selection of an eco-friendly hotel would ultimately align well with the customer's eco-conscious nature and hence the customers would feel playing a major part in reducing environmental pollution alongside saving the future of the generations that are yet to come. Thus, to reap the benefits that arise from green hoteling, it can be inferred that customers would opt for a flexible approach and exhibit greater willingness to spend at green hotels (Gan & Nuli, 2018).

To summarize it all, it can be asserted that the customer's preference to incorporate sustainable and eco-friendly options with regards to traveling will not only serve in minimizing the harmful effects posed by traditional hotels on the environment, rather green hoteling is considered to be beneficial for both the customers as well as the hotels. By performing green activities, hotels can significantly save up on their energy and water costs and project an eco-friendly image in the minds of the customers. On the flip side, customers that select sustainable and eco-friendly hotels are likely to score well on meeting the environmental regulations in laying down the foundation of a secure environment for future generations. Thus, in a nutshell, it can be inferred that the trend of green hoteling is going to rise in the years to come and customers are expected to demonstrate a higher willingness to pay for availing the services of green hotels (Yadav, Balaji, & Jebarajakirthy, 2018).

10-12 December, 2021
Barcelona, Spain

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10-12 December, 2021
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Article

8. The Effect of Green Certificates on the Purchasing Decisions of Online Customers in Green Hotels: A Case Study from Saudi Arabia

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Abstract: Customers are becoming more concerned about the use of green practices in the hotel industry. Managers are therefore starting to recognise the significance of green practices for clients' purchasing decisions and levels of satisfaction. This study aims to investigate how customers' decisions to book green hotels online and make purchases are impacted by green certificates. Two variables, namely the intentions to return and to pay a premium price, are used to measure customer satisfaction and purchasing behaviour towards green hotels. SmartPLS has been employed to analyse data gathered from 161 individuals from two hotels in Saudi Arabia. The results suggest that green certifications, environmental considerations, and green brand perception have a significant impact on online customers' satisfaction and purchase choices in the hotel sector. This paper provides a comprehensive framework that illustrates the connection between hotels' aspirations towards environmental concerns and customers' willingness to revisit and pay a premium price.

Keywords: green certificates; green hotels; sustainability; hospitality; tourism



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1. Introduction

The terms “sustainability” and “green” have become the lexicon of environmentally conscious hotels in the hospitality industry. Potential customers and hotel guests are becoming increasingly concerned about the integration of green practices in the hotel sector. Therefore, managers are realising the significance of green practices for customers' purchasing decisions and satisfaction levels (Lee, Lee, and Gunarathne, 2018) [1]. There has been an increase in the number of green hotels in Saudi Arabia, with more than 200 hotels representing themselves as eco-friendly on the travelmyth.com website (Eco Friendly Hotels in Saudi Arabia, n.d.). [2]. Some of them already have international green certificates such as Green Key (greenkey.global), including Radisson Blu Residence in Dhahran, Radisson Blu Resort Jizan, Radisson Blu Hotel, DhahranPark Inn by Radisson Al Khobar, and Radisson Blu Hotel, Yanbu. This growth represents the increasing interest of customers in implementing green practices in the hospitality industry, which has boosted the number of green certificates in the hotel sector.

Choi et al., (2019) [3] posit that green certifications, which were originally developed to enhance the environmental performance of hotels, attempt to better manage hotels' environmental and green practices. Achieving a green certificate allows hotels to obtain marketing leverage, which may increase their financial performance. The digital customer is technologically aware when it comes to searching for green hotels through reliable sources of accreditation such as green certificates (Customers Income: Exploring Customers' Willingness to Pay Towards Green-Rated Hotels, 2019) [4]. In developed countries, tourism planning has appropriate infrastructures that promote the preservation of the natural environment in a responsible and organised manner. This could eventually improve the

financial gains and the quality of the visitor experience. Green certificates could also be beneficial for hotels through enhancing and streamlining their environmental performance, thus assuring customers that their stay will be environmentally benign (Navarro, 2020) [5].

This research attempts to examine the effect of green certificates on customers' online purchasing decisions in the hospitality hotel industry in Saudi Arabia. This study adds to the body of knowledge related to how green certificates affect the hotel sector. First, it examines how the green certificate affects hotel clients' online purchasing choices. Second, it assesses how customers feel about green hotels and how this affects their behavioural intentions, such as their willingness to return and their intention to pay a higher price. Hotels can demonstrate their compliance with good environmental management practices by obtaining green certificates. Recent works have also revealed that green credentials have favourable economic effects on the hotel industry (Jeong and Jang, 2010). [6]

Adopting a green certificate strengthens the hotel's links to its external and internal stakeholders, regulatory bodies, the general public, and its staff. This may help the hotel project a favourable green image while increasing its financial gains (Jiang, 2019). [7]

2. Literature Review and Development of Hypotheses

Green certificates for hotels include Earth Check, Green Globe, Leadership in Energy and Environmental Design, Green Key, and the Global Sustainable Tourism Council certification (Green Hotel Certifiers | Green Tourism Certifiers | CertifiedGreen | Green Traveller Guides, n.d.). These certificates demonstrate a hotel's commitment to sustainable practices and environmental responsibility, including energy conservation, waste reduction, water management, and community engagement. They can also attract environmentally conscious guests who are willing to pay a premium for eco-friendly accommodations. In addition, green certificates can also contribute to the hotel's branding and reputation as a socially responsible and environmentally conscious establishment. Additionally, obtaining a green certificate can lead to cost savings for hotels in the long run by reducing energy and water consumption and minimising waste, which can also benefit the environment (Demiral, 2017) [8].

The idea that green practices adopted by hotels may lead to increased customers' satisfaction is a common theme of many studies in this field (Kim et al., 2019) [9]. Steg and Vlek (2009) [10] highlighted that motivational (i.e., the benefits and perceived cost along with morale and normative concerns) as well as various contextual factors play a significant role in promoting environmental behaviours. Therefore, green hotel management practices can significantly increase customers' environmental intentions (Nelson, Partelow, Stähler, and Graci, 2021) [11]. Consumers who look for information about hotel corporate social responsibility (CSR) activities and are more aware of hotel sustainability have a higher willingness to pay more to stay in a sustainable hotel (Navarro, 2020) [5].

When environmentally conscious customers choose to buy eco-friendly services, they are concerned about the environmental impact of their actions; that is, the more environmentally friendly the services are, the easier it is for such customers to form a favourable opinion and thus make a purchase decision (Jiang, 2019) [7]. In fact, sustainability-related green certificates play an important role in determining the likelihood of a customer visiting a sustainable hotel and increase favourable intention (Ettinger, Grabner-Kräuter, and Terlutter, 2018) [12]. Customers' attitudes to green hotels influence their purchase decisions and associated behaviour. Their environmental understanding has a significant impact on their willingness to support green measures and their overall opinion of green hotels (Jiang, 2019) [7]. Hotel customers' behavioural intentions are positively affected by a green hotel image. Ryu (2012) [13] highlighted that the brand image can significantly impact the purchasing decision of online customers in the hospitality industry. Similarly, Abrate, Pera, and Quinton (2020) [14] argued that brand image is an important antecedent of customers' online purchasing decisions.

Allameh (2015) [15] showed that customers' satisfaction is the fundamental determinant of their long-term purchasing decisions and behaviours. In the hotel industry, green

certificates play an important role in influencing consumers' satisfaction (Jin, 2013) [16]. Environmental hotel measures can boost client satisfaction, resulting in a strong, positive association between "green" operations and consumer gratification (Moise, 2018) [17]. The relationship between the adoption of green certificates and customers' online purchasing decisions, along with their satisfaction level, has been given limited attention in existing research. This study attempts to explore this relationship, and therefore, we hypothesise:

H1: *There is a significant positive association between a hotel's achievement of a green certificate and customers' attitude towards green hotels (ATT, in terms of satisfaction and willingness to make future reservations).*

Customers' environmental awareness influences green purchasing behaviour through affecting their views. Customers prefer to stay in sustainable hotels when they are aware of their policies (Navarro, 2020) [5]. Green certificates influence future online purchasing decisions through creating greater willingness to revisit the hotel (Jin, 2013) [16]. Chen (2010) [18] argued that investments in green practices, such as attaining green certificates, not only reduce hotels' negative impact on the environment but also improve their corporate image. To create a green hotel image, "it is necessary to include (functional and emotional) green positioning into hotel operations" (Lee et al., 2010) [19]. Positive brand image plays a significant role in the competitive strategy of the firm. It creates a customer experience that is more gratifying (Lai, 2009) [20], increasing customers' willingness to revisit the hotel. In addition, a positive image becomes a valuable operational instrument for recruiting and maintaining more visitors (Chen, 2010) [18].

Lee, Hsu, Han, and Kim (2010) [19] carried out research to investigate customers' and other people's perceptions of green hotels. They sought to understand the effect of green image on the behaviours of potential customers of hotels. Potential customers tend to perceive green hotels in a positive manner. In addition, a green image plays an important role in attracting customers to a hotel. With the implementation of precise marketing tactics and strategies, it becomes possible for green hotels to ensure that the desired number of customers will increase. A number of questions were considered by the authors for the identification and evaluation of perceptions of people regarding green hotels. Some of these questions were as follows. Do you want to stay at a green hotel? Do you prefer a green hotel over a traditional hotel? Are you aware of green hotels? Would you pay extra to stay at a green hotel? Do you think there should be more green hotels? Do you see advertisements for green hotels? Were you previously aware of green hotels? (Lee, Hsu, Han, and Kim, 2010.) [19].

H2: *There is a significant positive association between attitudes towards green hotels and the intention to visit/revisit them.*

Green hotels have significant operational expenses, which affect the price of the goods and services supplied. Consumers' willingness to pay for these goods and services will be influenced by high prices. When consumers believe in the benefits of green hotel services, they will be prepared to pay for any of these services, regardless of the additional financial costs (Adiasih, 2019) [4]. However, online customers' willingness to pay extra premium prices for a hotel with a green certificate presents mixed results (Kucher, Heldak, and Raszka, 2019) [21]. Some researchers found that online customers are willing to pay a higher price to reward hotels for their ethical behaviours (Zhang and Dong, 2020) [22]. However, Rahman (2018) [23] has highlighted that customers have different preferences for green hotels. The author found that there is a lack of research that actually determines whether customers are willing to consider the use of green hotels and pay a premium price. Kumar et al., (2021) also corroborated Rahman's (2018) [23] findings by concluding that other investigators discovered that customers are price-sensitive, i.e., not willing to pay a premium price for adopting green practices. They believe that hotels must have ethical practices as part of their daily operations and should overcome the additional costs associated with the adoption of these practices. In light of this evidence, this study's

null hypothesis is strengthened, as is the need to clearly determine whether there is a significant positive association among attitudes towards green hotels and the intention to visit/revisit them.

Karavasilis (2015) [24] performed research to determine and identify the perceptions of Generation Y towards green hotels. To understand what people thought and believed about them, the researchers conducted an empirical research study with the use of an online survey. A questionnaire was utilised for the investigation of what people thought about green hotels and what they should consider for improving their image and customers' awareness. It is important to note that the findings indicated that the respondents were highly conscious of the environment. However, they were not completely aware of the existence of green hotels. As a result, it has been determined that while people are willing to pay more for green hotels, they are not informed about their reputation (Karavasilis et al., 2015) [24].

H3: *There is a significant positive association between attitude towards green hotels and the intention to pay a premium (ITP) price for sustainable hotels.*

In recent years, consumers have been increasingly looking for products and services that are created using sustainable techniques and contribute to environmental conservation (García-Salirrosas and Acevedo-Duque, 2022) [25]. Most hotels take environmental conservation seriously and strive to reduce their environmental effect through ecologically friendly measures. A recent survey found that 55% of guests were willing to pay more for an ecologically friendly hotel room (Yu, 2022) [26]. Furthermore, 70% responded that choosing an ecologically responsible hotel would affect their decision to book a specific hotel for a vacation or business travel. This shows that there is a high demand for eco-friendly hotels, and that hotels can grow their market share by improving their environmental performance. If a hotel's management wants to promote visitor pleasure and loyalty, it should embrace environmentally friendly practices and enhance its environmental performance by incorporating cutting-edge technology into its operations (Fonseca and Carvalho, 2019) [27]. Green accreditation is an official recognition of a hotel's dedication to ecologically responsible and sustainable business practices. It is an important marketing strategy for differentiating the hotel from competing properties and attracting more customers (Ostapenko, Bakumenko, and Usenko, 2020) [28]. Green accreditation from third-party organisations demonstrates a dedication to sustainability and environmental protection, as well as leadership in energy reduction and waste management (Foris, Crihalmean, and Foris, 2020) [29]. Marriott International's gold standard environmental sustainability programme, for example, has acquired the US Environmental Protection Agency's (EPA) Green Seal certification in acknowledgement of the company's efforts to decrease its environmental footprint and encourage ecologically sustainable practices (Marriott International News Center (US), 2021) [30]. By gaining these certifications, the hotel demonstrates its dedication to the environment while also strengthening its reputation as a good corporate citizen among clients. Hotels can embrace sustainable practices and advance their environmental performance, in addition to gaining certification from third-party organisations by implementing measures that promote energy efficiency and the use of renewable energy resources. These steps can minimise the amount of energy used by the hotel, resulting in lower greenhouse gas emissions and reduced operating expenses. It is possible to considerably reduce the quantity of garbage produced and the energy required by the hotel by making minor adjustments to its operations. It is also critical to educate hotel employees about sustainability initiatives and how these practices may benefit the environment while also saving money in the long run. As a result, green certification is a vital component of a hotel's environmental sustainability programme, and it may be a potent marketing tool for promoting the organisation's dedication to sustainability and environmental preservation.

H4: *There is a significant positive association between a hotel's achievement of a green certificate and customers' intention to revisit (ITG) the hotel.*

It goes without saying that hoteliers are constantly looking for methods to boost their revenues. In recent years, they have begun incorporating environmentally friendly methods into their operations to attract clients looking for eco-friendly accommodations (Serrano-Baena et al., 2020) [31]. One way in which hotels promote their “green” credentials is by obtaining green certification. According to one survey, more than 40% of green-certified hotels have experienced a rise in the number of clients requesting their rooms (Gu, 2022) [32]. This indicates the potential of attaining green certificates in order to attract more customers and increase earnings. Yet, whether green certifications may actually enhance customer spending at hotels remains to be seen. While research indicates that many consumers are ready to pay more for a green-certified room (Nelson et al., 2021) [11], it is unclear whether this translates into higher spending during the actual stay. However, it is undoubtedly a trend that will grow in popularity in the future. Green certificates will become more popular as more people become aware of the importance of environmental sustainability. Even a few years ago, few customers were willing to pay a premium for green-certified hotels.

However, as more people become aware of the benefits of being green, the demand for green certificates will rise. As a result, it stands to reason that the greater the number of individuals who are prepared to pay a premium for green-certified rooms, the more they will be willing to spend on other goods and services while staying at the hotel. A number of hotel operators have even devised novel techniques to entice guests to spend more money while staying with them. Some hotels, for example, provide a “green package” that includes free parking. Others allow them to use the hotel’s electric car service during their stay. Some provide guests with discount certificates that are redeemable at neighbouring eateries and businesses. While these gimmicks are unlikely to raise guest spending significantly, they will undoubtedly assist in enhancing revenue by increasing sales in the hotel gift shop or restaurant. The end result is that green certifications can help businesses attract more customers and increase revenue. Hotel owners can not only attract new tourists but also retain existing ones by introducing eco-friendly measures in their operations. Hotels will be able to differentiate themselves from competitors and so grow their client base and profitability in the long run by offering a more engaging experience for guests (Pusparini et al., 2021) [33].

H5: *There is a significant positive association between hotels’ green certificates and customers’ intention to pay a premium price for hotels.*

One study investigated the association between ecological hotel customers’ loyalty and willingness to pay a premium price. It was discovered that there is a favourable association between customer loyalty to return to the hotel and the intention to pay more for the hotel’s premium experience (Wang et al., 2019) [34]. However, there was no statistically significant association between the hotel’s perceived environmental and social responsibility and customer loyalty or intent to pay extra for a premium experience provided by the hotel (Zheng et al., 2020) [35].

This implies that while customers may be prepared to pay more for a “green” hotel experience that is equally opulent and comfortable, social and environmental responsibility is not a major deciding factor in deciding whether or not to return to a hotel. This study also discovered that customer loyalty in terms of returning to an ecological hotel was positively connected with an appreciation of the hotel’s ecologically responsible characteristics, but not with the willingness to pay a premium price for the experience delivered at the hotel.

H6: *There is no significant association between the intention to revisit a hotel and to pay a premium price for to stay at sustainable hotels.*

Figure 1 illustrates the relationships among the variables. It has been observed that there is one independent variable, a mediating variable, and two dependent variables. The relationship between the variables will be tested using a survey questionnaire and SmartPLS analysis, which will be described in the methods section.

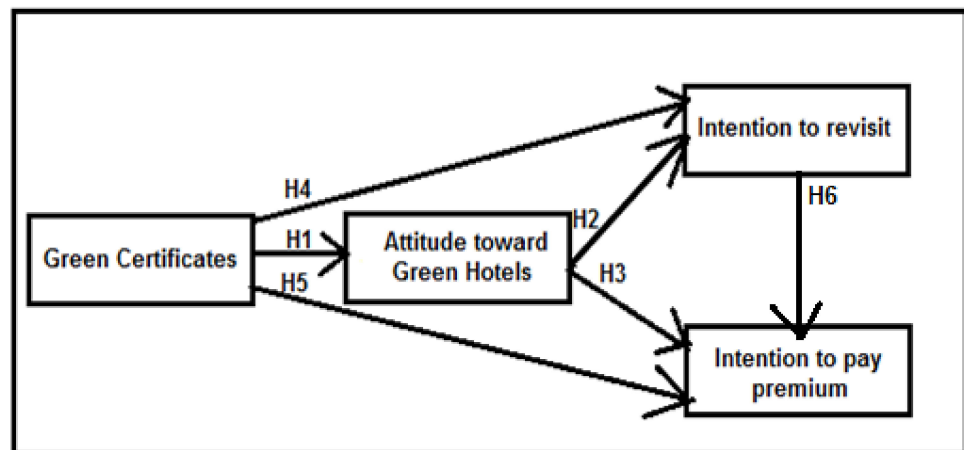


Figure 1. The conceptual framework of the research describing the relationships between variables. Note: intention to revisit is the same as intention towards green hotels.

3. Methodology

3.1. Introduction

Green hotels are properties that attempt to institute programmes to save energy and water, as well as to reduce the solid waste produced (Peiro, 2014) [36]. The focus of this research is on hotels that have won green certificates and obtained eco-certification, such as sustainable properties on booking.com.

The EPA awards green certificates to hotels and motels that take initiatives to lessen their environmental effect (Astawa et al., 2022) [37]. These efforts may include increasing energy efficiency, minimising waste, and supporting environmentally friendly practices.

The EPA grants Green Seal certification to hotels that meet specific requirements listed in their “Green Hospitality Assessment” handbook. The evaluation compares a hotel’s operations and processes to “best practice” criteria. An accredited assessor conducts on-site inspections and surveys to check that the hotel is adhering to the EPA guidelines. Hotels are certified based on their total score and the number of areas where they fulfil the Green Seal Guide standards. Hotels that are certified must keep their accreditation status by meeting ongoing compliance standards (Green Seal, n.d.) [38].

Sustainability has become a major topic in several industries in recent years. The hotel industry is no different. When it comes to picking a hotel, one of the most crucial criteria is sustainability. So, what exactly is sustainability, and how does it impact the hotel industry? The definition of sustainability is straightforward. It is the continual ability to meet society’s current requirements without jeopardising future generations’ capability to meet their own (Giunta, 2017) [39]. Simply expressed, it is the ability to live in peace with environment while preserving the planet’s resources for future generations.

What is its significance in the hotel industry? In recent years, the hotel sector has played a significant role in developing sustainable choices and offering environmentally friendly housing options to visitors as part of their whole experience. Many hotels throughout the world, for example, have implemented a variety of initiatives to lessen their environmental effect and become more socially responsible. Installing solar panels to create renewable energy and employing eco-friendly cleaning solutions are two examples. These techniques are not only more ecologically friendly, but they also help to save money and reduce energy bills in the long run. Hotel owners all around the world are seeing the numerous benefits of adopting more sustainable business practices and are beginning to implement a variety of programmes to assist their guests in reducing their environmental impact throughout their stay.

3.2. Research Design

This section explores the methodology utilised to conduct this research. This study explores guests' intention to visit green hotels by analysing the effects of green certificates on the purchasing decisions of online customers in the hotel industry. It also analyses the green facts of the hospitality industry on attitudes towards green hotels.

This study adopts a descriptive and experimental research design. The descriptive research design discusses the previous literature on this particular theme and also explains the work of various authors to analyse the sustainable facilities of the hotel industry. The experimental research design includes the experiments that have been performed in the field to analyse particular aspects. This research is conducted by using the positivism research paradigm because it tests the hypothesis and information about the arguments. According to this research paradigm, the role of researchers is limited during the data collection procedure and it is a good way to test hypotheses (Ahmad and Zhang, 2020; [40] Churchill et al., 1979; [41] Cohen et al., 2017; [42] Easterby-Smith et al., 2008; [43] Eisenhardt and Graebner, 2007; [44] Howitt, 2010; [45] Johnson et al., 2007; [46] Marczyk et al., 2005; [47] Thiétart, 2001; [48] Yin, 2018) [49].

The deductive research philosophy has been utilised in this research because it is based upon the theories of various researchers. After analysing different theories, the hypothesis has been developed. Then, a survey questionnaire—a quantitative approach—has been developed to test the hypotheses (Creswell, 2009; [50] Easterby-Smith et al., 2008; [43] Johnson et al., 2007) [46].

3.3. Data Collection Procedure

The main source of data is survey responses from two of Riyadh's largest five-star hotels collected between March and June 2022. The Hilton Riyadh and the Hyatt Regency Riyadh Olaya are the two hotels. We choose guests from the top-rated hotels on booking.com, which have over 6000 and 10,000 reviews, respectively. These hotels are also identified as sustainable properties on booking.com, indicating that they have made significant efforts to provide more environmentally friendly and sustainable travel, relating to waste, water, and energy management, as well as greenhouse gas reduction, location and community, and nature (Hilton Riyadh Hotel & Residences, Riyadh, Saudi Arabia) [51].

The self-administrated questionnaire has been used as an instrument for data collection and is based on closed-ended questions. These questions have been developed according to a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5).

3.4. Response Rate

After checking the surveys, only 161 usable surveys have been found to fulfil the requirement of this research (39 surveys have some missing information, and therefore, they have been rejected). The high response rate—80.5%—is due to the approach used by the researchers to collect data, which was based on using the drop and pick method with customers to fill in the survey. The response to the sample size for this research was 161 respondents from among hotel customers. The respondents were selected according to their gender, age, level of qualification, and annual income. Table 1 describes the distribution of the sample according to demographic variables. while Table 2 examines the different Indicators and related questions.

Table 1. Sampling distribution depending on the demographic variables.

Variables	Levels	Frequency	Percentage
Gender	Male	110	68.6
	Female	51	31.7
	Total	161	100
Age	18–29	17	10.6
	30–45	57	35.4
	46–60	69	42.9
	Above 60	18	11.2
	Total	161	100.0
Qualification	Bachelor’s	104	64.6
	Master’s	39	24.2
	PhD	12	7.5
	Other	6	3.7
	Total	161	100.0
Expected annual income	Less than 20,000	53	32.9
	20,000–40,000	53	32.9
	More than 40,000	55	34.2
	Total	161	100.0

Table 2. Indicators and related questions.

Indicator	Question Related to Variable in the Questionnaire
Green certificates and awards (GCA)	
GCA1	As a visitor/tourist of hotel, it is essential to me that a hotel’s services are “green”-accredited.
GCA2	I will go to a green hotel that has been awarded a green certificate and award.
GCA3	My attitude towards green hotels can be changed positively for a hotel that has been awarded the International Organization for Standardization 14001 standard.
Environmental concerns (ATT)	
ATT1	I am aware of green hotels.
ATT2	I want to stay at a green hotel.
ATT3	I am aware of sustainability issues.
Intention towards green hotels (ITG)	
ITG1	It is worth paying for the service and quality of green hotels.
ITG2	I think green hotels have consistent quality.
ITG3	I think the services of green hotels are well-designed.
Intention to pay a premium (ITP) for sustainable production	
ITP1	It is worthwhile to choose green hotels when it comes to travelling.
ITP2	I believe it is economical to visit green hotels.
ITP3	I would pay more for green hotels.

4. Partial Least Squares (PLS)—Structural Equation Modelling Model Discussion

The evaluation of a PLS model is a process that involves two steps. First, we assess the measurement model’s validity and reliability, and second, once we confirm that the model has been measured with confidence, we evaluate the structural model.

The measurement or outer model assessment consists of evaluating the relationships between the items (observable variables) and the constructs (latent variables). In our model, the items related to the different latent variables are configured as reflective measures. To assess the reliability and validity of the measures, we check the reliability of the indicators, the internal consistency, and the convergent and discriminant validity. To show the sufficient reliability of each indicator, each latent variable should explain more

than 50% of the variance in a specific item; that is, item loadings should be greater than 0.7 (Chin, 1998) [52]. Internal consistency indicates that the items of a latent variable share sufficient variance among them (Fornell and Larcker, 1981) [53]. Internal consistency can be confirmed if composite reliability (CR) (Nunnally and Bernstein, 1994) [54] or rho-A (Dijkstra and Henseler, 2015) [55] values for each construct are higher than 0.7. Convergent validity indicates that the items represent the same latent variable, and it is evaluated using the average variance extracted, AVE (Fornell and Larcker, 1981) [53]. Accepted values of convergent validity should be above 0.5. Finally, discriminant validity indicates that each construct is sufficiently different from other constructs. Discriminant validity can be confirmed if the heterotrait–monotrait (HTMT) ratio of correlations (Henseler, Ringle, and Sarstedt, 2014) [56] is below 0.85. Table 3 shows the item loadings, AVE, CR, and rho-A values. Table 4 depicts the corresponding HTMT ratios for the model tested. All the values meet the suggested thresholds, indicating that the measurement model was assessed with confidence.

Table 3. Measurement model indicators.

	Outer Loadings	CR/rho_A	AVE
GCA		0.856/0.762	0.665
GCA1	0.752		
GCA2	0.852		
GCA3	0.838		
ATT		0.904/0.844	0.759
ATT1	0.870		
ATT2	0.921		
ATT3	0.819		
ITG		0.813/0.867	0.685
ITG1	0.854		
ITG2	0.882		
ITG3	0.740		
ITP		0.801/0.882	0.714
ITP1	0.785		
ITP2	0.858		
ITP3	0.888		

Table 4. Heterotrait–monotrait ratio (HTMT)matrix.

	ATT	ITG	ITP
ITG	0.587		
ITP	0.744	0.394	
GCA	0.757	0.661	0.785

Once the measurement model has been assessed, we evaluate the relationships in the model. The structural model is analysed through the analysis of the path coefficients, the coefficients of determination (R²), and the predictive relevance (Q²).

Figure 2 shows the results of the structural model. The path coefficients (β coefficients) corresponding to the partial regression coefficients are indicated on the arrows. The R² values for the corresponding regression are shown inside the endogenous variables.

The standardised denotes the strength and direction of the causal relationships between two latent variables in the model. We use a bootstrapping resampling technique with 5000 samples to evaluate the significance of the relationships in the model. This allows for evaluating the *t*-statistics, *p*-values, and confidence intervals of the regression coefficients. Table 5 shows that all the paths in the model have a significant impact with a moderate or high magnitude, according to Chin (1998) [52]. We also check that the bootstrapping bias corrected and accelerated (Bca) the confidence interval distant from and not including the zero. We find the explanatory quality of the model moderate (Chin, 1998). The coefficients of determination (R²) suggest that the variance explained by the model

exceeds the values suggested by Falk and Miller (1992) [57]. Finally, Table 5 includes the Q2 value that represents the ability of the model to predict the reflective indicator of the endogenous constructs. The Q2 values obtained using a blindfolding procedure are above zero, indicating a sufficient predictive relevance.

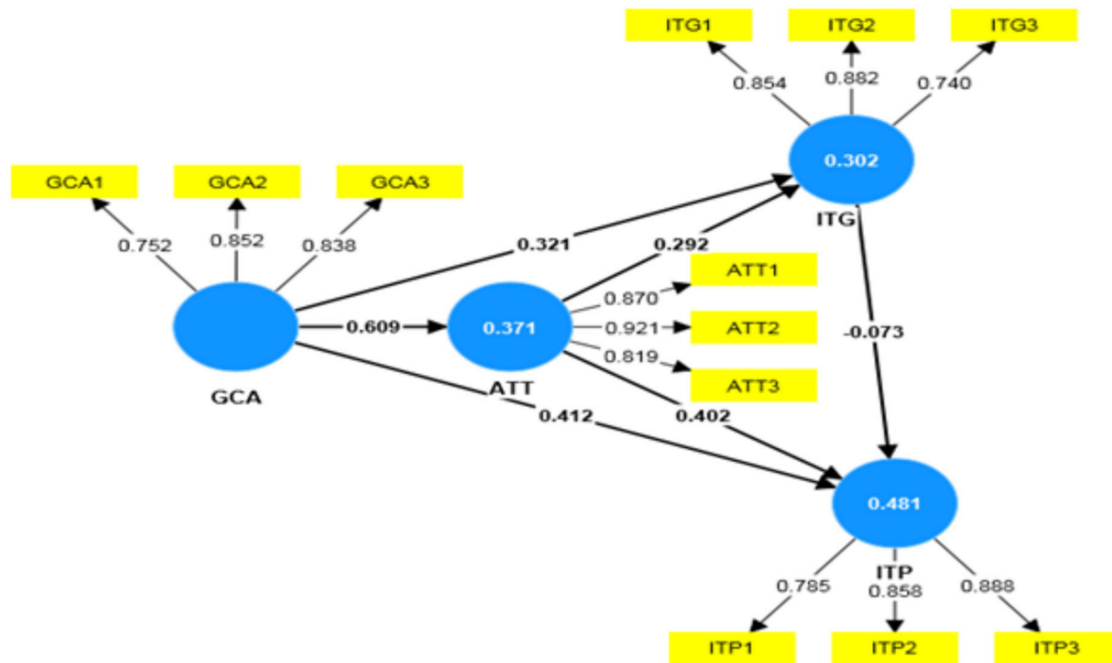


Figure 2. Structural model.

Table 5. Direct effects, explained variances, and Q2 test for endogenous variables.

Effects on Endogenous Variables	Direct Effect (t-Value)	Bca 95% Confidence Intervals	R ² /Variance Explained (%)	Q ²
Effects on ITG			0.302	0.235
ATT	0.292 ** (2.819)	[0.076, 0.480]	14.2%	
GCA	0.321 ** (3.151)	[0.115, 0.515]	16%	
Effects on ITP			0.481	0.372
ATT	0.402 *** (5.371)	[0.251, 0.543]	24.87%	
GCA	0.412 *** (4.979)	[0.242, 0.565]	25.62%	
ITG	−0.073 (929) n.s.	[−0.227, 0.079]		
Effects on ATT			0.371	0.359
GCA	0.609 *** (10.365)	[0.475, 0.709]	37.1%	

** means significant at $p < 0.01$. *** means significant at $p < 0.001$.

In this study, we wanted to see if green certificates increased the likelihood of returning and paying a higher price for a hotel room. The structural model confirmed the positive and significant relationships between these variables, confirming the findings of previous studies such as this one: “Exploring Recreational-Environment Fit Hospitality Experiences of Green Hotels in China”, written by Yu and published in the journal Sustainability in 2022 (Yu, 2022) [26]. Gu has also confirmed these findings in his article “The Effects of Subjective Knowledge, Altruistic Value and Consumer Self-Confidence on the Green Purchase Attitudes and Green Purchase Behaviour of Chinese Customers”, which was published in 2022(Gu, 2022) [32].

GCA positively and significantly affect ATT (H1: $\beta = 0.609$, sig. at $p < 0.001$). This attitude positively and significantly impacts (H2: $\beta = 0.292$, sig. at $p < 0.01$; H3: $\beta = 0.402$, sig. at $p < 0.001$) ITG and ITP. Therefore, green certifications positively influence the ITG andwhetherto pay a premium, which are aligned.

However, we wanted to evaluate if these relationships were mediated by the ATT. As stated in the hypothesis development, a hotel that follows a green certificate programme is typically one that is exceeding legal requirements. It is aware of its impact on the environment and wants to be excellent in areas outside of the financial part of the business. In other words, it has higher managerial standards, and therefore, it is supposed to already have a higher quality of services than similar hotels that do not have the same goals. We therefore assumed that green hotels will satisfy their customers more and the customers will have a higher ITG and pay a premium for those services. This may be termed the indirect effect or a rigid consequence of green certificates. On the other hand, we can expect that customers are aware and sensible regarding the environmental impact of hotels. With the number of people travelling becoming increasingly larger, it is no wonder that hotel customers now care more about the environment. In fact, according to a study performed by the Accor Group, 72% of hotel guests say that they would take an action that would help a hotel reduce its environmental impact (Environment & CSR—Accor) [58]. Furthermore, half of those hotel guests who completed the survey said that hotels should do more to minimise their environmental impact, and an additional 20% said that they were unaware that hotels could do anything to reduce their environmental impact. These statistics show that hotel customers are concerned about the environmental impact of their hotel stays and are looking for hotels to be more sustainable (Brandão and Cupertino de Miranda, 2022) [59]. This highlights the importance of making a hotel as eco-friendly as possible.

One way that a hotel can become greener is by adopting green energy. For example, the guests may not realise that a hotel is switching from traditional energy sources to green energy; however, they will be more likely to stay at a hotel if they know it is doing its part to reduce carbon emissions. Additionally, many customers want to support businesses that are sustainable and responsible. If they know that a hotel is using green energy sources and supporting environmental causes, they will feel more inclined to stay at that hotel in the future. As an added bonus, people may be willing to pay extra to stay at an eco-friendly hotel because they will feel good about supporting an environmentally conscious business. Overall, going green is a great way to reduce a hotel's impact on the environment and attract new customers (Amin and Tarun, 2019) [60].

Another way to make a hotel more eco-friendly is to recycle as much as possible. Starting with the guest rooms, guests could be encouraged to reuse their towels and sheets during their stay to help reduce waste. Signs could be posted in hotel rooms to remind guests about the importance of recycling and what they can do to make a difference. Once guests are aware of the issues associated with climate change, they may decide to make a deliberate effort to be more environmentally conscious in their daily lives. As a result, the hotel can show them that it is located in a "green" area that is dedicated to protecting the natural environment and helping to combat climate change. Providing this information may encourage guests to choose that hotel the next time they need to stay in the area.

Therefore, we may assume that attitude in this sense is going to increasingly mediate the relation between green certificates and the main outcome variables in this study, ITG and to pay a premium. That is, green certificates increase the visibility of the environmental issues related to hotels and, therefore, the ATT. Customers that are more aware and appreciative of what green hotels are will be more willing to revisit these hotels and to pay a premium.

The positive and significant values in H4 ($\beta = 0.321$, sig. at $p < 0.01$) and H5 ($\beta = 0.412$, sig. at $p < 0.001$) confirmed a partial mediation of the ATT in the relationships between GCA, ITG, and ITP. Indeed, we can see that the variance explained by the direct relationships and the mediation through ATT are similar, both for ITG and ITP. The variance explained by the model is moderate, according to the previous studies explained in the literature review above.

Finally, we were unable to confirm any impact of the ITG on ITP (H6: $\beta = -0.073$, not sig.) as there was no statistically significant association between the hotel's perceived

environmental and social responsibility and customer loyalty with intention to pay extra for a premium experience provided by the hotel (Zheng et al., 2020) [35].

5. Conclusions

This research has investigated the relationship between green certificates and customers' purchasing behaviours in the hotel industry. Green certificates influence customers' attitudes towards green hotels. A five-point Likert scale was used to measure the attitudes and behaviours of online customers. In addition, linear regression models were constructed to investigate the relationship between the variables. This research provides both theoretical and practical contributions.

From a theoretical perspective, this research adds to the body of knowledge related to sustainable hospitality and green practices. In particular, this study found that green certificates have a significant positive impact on the purchasing decisions of online customers in the hotel industry (attitudes towards green hotels). The positive correlation between the variables indicates that attitudes towards green hotels have increased alongside the surge in environmental concerns among customers. The relationship between attitudes towards green hotels and the intentions to revisit green hotels and pay a premium is also significant and positive. Thereby, hotels with green practices are expected to have more customers and, eventually, a better competitive position in the industry. Hospitality entities should employ more green operations and sustainable practices (for example, the use of organic goods and fewer toxic chemicals, reprocessing, less energy consumption, and water-efficient fittings) to support their green reputation, which will, eventually, appeal to customers (Kim et al., 2019) [9].

From a practical perspective, environmental concerns play a substantial role in customers' intentions to visit green hotels. Therefore, hotel managers and marketers must understand how to present environmental statistics to customers to stimulate their interest in green hotels. Hotel customers who are environmentally conscious and have an adequate knowledge of eco-friendly practices in green hotels are more likely to visit and revisit green hotels. Green certificates related to sustainability play an essential part in determining the possibility of visiting sustainable hotels and generate favourable intention among customers (Chendo, 2021) [61].

Customers have more trust and confidence in hotels that are engaged in green practices to keep the environment safe and healthy. Green certificates motivate customers' willingness to pay a premium for green hotels, as they increase their trust in such hotels. Eventually, customers will show more interest in visiting and staying at green hotels. Their trust in hotels' green practices will encourage them to pay a premium and enhance their satisfaction (Gupta, Dash, and Mishra, 2019) [62].

Hotel visitors are becoming increasingly demanding in regard to green certifications as they become more aware of environmental challenges. Being environmentally friendly may strengthen the hotel industry's reputation and appeal to more clients. Hoteliers must combine sustainable practices with greater cleaning and hygienic procedures to meet the customers' new expectations, e.g., the challenges experienced during COVID-19. Hotels that adopt sustainable practices and align them with green operations are expected to have more customers. It has become pertinent for hotels to build their marketing strategy around sustainability because customers are more environmentally conscious and aware (Verma and Chandra, 2016) [63].

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9. Main results and findings:

The results of this doctoral dissertation show that the importance of environmental certification in hotels will receive increasing attention from 2010 to 2020. The number of publications on the subject has grown significantly, demonstrating that researchers around the world are aware of the growing environmental problems and the need for sustainable action in the hospitality industry. This growing environmental awareness is influencing customer behaviour and willingness to pay more to stay in green hotels.

The study highlights that green certification, environmental friendliness and green brand perception have a significant impact on online consumer satisfaction and purchasing decisions in the hotel industry. The organization emphasizes the importance of having a hotel eco-certified as a motivating factor for customers to choose sustainable options and minimize environmental concerns. This result is in line with previous research showing increased customer demand for environmentally friendly products and services.

The research identified customer self-interest as a motivating factor in deciding on sustainable hotel offers. Millennials, in particular, are more willing to pay more for hotels that adopt environmentally friendly practices. A customer's previous green hotel experience also has a significant impact on their willingness to pay extra. When customers are satisfied with their previous experience at an eco-friendly hotel, they may return to the hotel and indicate they are willing to pay more for the environmental benefits it offers. higher. The results confirm that customers are willing to pay more to stay in green hotels. Sustainable travel is becoming more and more important, with a significant percentage of travellers choosing eco-friendly accommodations to address environmental concerns. Even with cost considerations, a significant percentage of customers are willing to spend more on travel activities to minimize the negative environmental impact of traditional hotels.

The study highlights the link between a hotel's environmental commitment, customer satisfaction, and willingness to come back and pay more. This study provides valuable insight into the importance of green certifications for hotels and how these certifications can promote sustainable practices in the hospitality industry. This will contribute to a better understanding of the impact of green certificates on customer preferences and encourage hotels to use these labels to demonstrate their commitment to the environment and to attract environmentally conscious consumers. Provides recommendations on how to use it effectively.

According to the study's findings, once customers adopt a good attitude toward green hotels, it influences their overall perception of the hotel brand. This positive link with sustainability and environmental stewardship boosts client loyalty and the likelihood of repeat business. Customers that respect sustainability are more inclined to prioritize hotels with green certifications in their future travel plans, suggesting green certificates' long-term influence on customer attitudes and behaviors.

Furthermore, customers' willingness to pay a premium for hotels with green credentials illustrates the importance they place on sustainability. According to the findings of the study, customers associate green certificates with better environmental practices and regard them as markers of quality and authenticity. This affiliation fosters trust and confidence in the hotel's environmentally responsible operations, resulting in a greater readiness to invest in environmentally responsible accommodations. Customers understand the increased value and are willing to pay a premium for green-certified hotels' positive environmental impact. This conclusion illustrates not just the financial incentives for hotels to achieve green certifications, but also the relevance of sustainability in meeting client wants and preferences.

Customers' decision-making processes are influenced by environmental concerns and knowledge. According to the study, clients who are more environmentally sensitive and have a

better understanding of eco-friendly procedures are more likely to choose green hotels. Customers may deliberately seek out accommodations that reflect their ideals and contribute to environmental protection. Furthermore, well-informed clients who grasp the benefits of green certificates are more likely to prefer sustainable accommodations, according to the study. Effective communication and education about the environmental benefits of green certifications are critical in enabling customers to make educated decisions that reflect their values. Hotels can take advantage of this by making clear and easily accessible information about their sustainability efforts and the importance of their green certifications to attract environmentally conscious customers.

Green certificates, in addition to influencing attitudes, play an important role in influencing client purchase decisions. According to the study, internet customers are more likely to choose hotels with green certifications over those without such credentials. Green certificates serve as a differentiator, allowing customers to make better informed decisions that line with their environmental beliefs. Customers' awareness of the environmental impact of their travel choices grows, and the availability of green certifications becomes more relevant in their decision-making process. Hotels that promote sustainability and get green certificates are more likely to attract a bigger number of environmentally concerned guests, giving them a commercial advantage.

The presence of green certificates effects not just individual client decisions, but also a hotel's general reputation and appeal. Hotels that use sustainable practices and integrate them with green operations are deemed to be environmentally friendly. A hotel's affiliation with green certifications increases its reputation and positions it as a favored alternative for environmentally conscious individuals looking for green accommodations. This excellent reputation attracts a broader customer base, including those who deliberately seek out environmentally friendly solutions. Hotels that promote sustainability and achieve green certifications are well-positioned to gain a competitive advantage as customers grow more aware of environmental concerns and seek ecologically friendly options. Building a reputation for sustainability is critical for hotels to attract and keep environmentally concerned consumers in an industry where environmental awareness and responsibility are growing concerns.

Here is a summary of the findings in relation to the research questions established in the doctoral thesis:

The doctoral thesis evaluated the impact of green certificates for hotels on internet customers' purchase decisions and readiness to pay a premium for hotels with green certifications vs those without such certifications. The findings of the study shed light on both of these research concerns.

Concerning the first research question, how green certifications affect online customers' purchase decisions, the data show a clear and favorable association. Online clients were more likely to select hotels with green certifications over those without such credentials. Customers' decision-making processes were positively influenced by the presence of green certificates, indicating that environmental sustainability is an important factor in their hotel selection criteria. This lends credence to the view that green certifications serve as a differentiating feature, assisting customers in making educated decisions that line with their environmental beliefs.

The research findings confirm that customers are willing to pay a premium for environmentally responsible lodgings in connection to the second research question on the propensity of online customers to pay a premium for hotels with green certificates. Green certifications are associated with better environmental practices, and customers see them as markers of quality and authenticity. Customers are willing to pay a premium for ecologically friendly accommodations because they have enhanced trust and confidence in the hotel's green

policies. As a result, the data confirm the notion that online customers respect sustainability and are prepared to support eco-friendly behaviors financially.

In summary, the outcomes of the study answer the research questions by proving the favorable influence of green certificates on customers' purchasing decisions and willingness to pay a premium. Customers' opinions about green hotels are influenced by the presence of green certificates, resulting in a higher possibility of choosing green-certified accommodations. Furthermore, clients see green certifications as a sign of quality and authenticity, which leads to a greater desire to invest in ecologically responsible accommodations. These findings emphasize the significance of green certifications in changing consumer perceptions and actions, highlighting the importance of sustainability in the hotel business and the value customers place on environmental responsibility.

In conclusion, the research findings show that green certificates have a considerable positive impact on customers' attitudes and behaviors in the hotel business. Green certificates influence customers' perceptions toward green hotels, resulting in an increased possibility of choosing green-certified rooms. Customers are willing to pay a premium for hotels with green certificates because they perceive them to be authentic and committed to environmental responsibility. Environmental concerns and information play a significant influence in customers' decision-making processes, with environmentally concerned persons seeking out sustainable hotels. The availability of green credentials improves a hotel's reputation and attraction to customers, establishing it as an environmentally responsible option. Overall, the study emphasizes the significance of green certificates in shaping consumer perceptions, influencing purchasing decisions, and establishing a sustainable and competitive image in the hotel business. These insights can be used by hoteliers to improve their sustainability processes, promote the value of their green certifications, and attract a rising customer base of environmentally concerned people.

10. General Conclusion:

In conclusion, the findings of this doctoral thesis suggest that environmental certificates have a positive impact on the purchasing decision of online customers for green hotels. As the tourism industry continues to grow and customers become more environmentally conscious, the adoption of sustainable practices and the use of environmental certifications can be a key differentiator for hotels.

The first article (chapter 2) talks about talent management in tourism industry which plays an important role compare to competitors. Therefore, it is necessary for the players to ensure that they come up with the correct strategies that will be able to attract the right talents. From the conference, it can be established that there are several factors that influence the human resource in the tourism industry. Discrimination is one such factor where it has been shown that women are more discriminate than men. Other factors include the pay, economic status of a country and other factors.

The topic “Importance of environmental certificates for green hotels” in the second article (chapter 3) is becoming increasingly popular among researchers. The results indicate that Cornell University, Hong Kong Polytechnic University, George Washington University, and Polytechnic University of Valencia are the institutes producing high-quality research work. Spain and USA are the largest contributors, as they have published 52% of the total articles in the area under this study. The keywords “environmental certification,” “tourism,” and “sustainability” appeared the most among all the keywords used in the articles. 44% of the articles used in this research were published in the journals “Sustainability,” “International Journal of Hospitality Management,” “Cornell Hospitality Quarterly,” “International Journal of Contemporary Hospitality Management,” and “Journal of Sustainable Tourism.” The study may have some limitations, such as the researcher using Web of Science database as the main database, while other databases were also used, which may involve low-quality data set for conducting analysis.

In conclusion, this doctoral thesis has demonstrated the importance of environmental certificates in promoting green practices within the hospitality industry. Through the use of bibliometric and network analysis, we have examined the impact of these certificates on a global scale, providing valuable insights into their effectiveness in various regions and highlighting areas for improvement. Overall, the findings suggest that environmental certificates can serve as an important tool for promoting sustainable tourism and reducing the industry's negative impact on the environment. (Bogetic et al., 2015) Furthermore, this study has shed light on the growing trend of eco-conscious tourists who are willing to pay a premium for environmentally friendly accommodations. The results also demonstrate the need for greater standardization and transparency in the certification process to ensure that these certificates maintain their value and credibility. (Radzi et al., 2020) Moreover, this research has highlighted the importance of continued education and awareness-raising to ensure that green practices become embedded in hotel operations.

The third article (Chapter 4) focuses on green lodging which is becoming increasingly popular in today's world, with customers becoming more eco-conscious. A survey conducted in 2017 showed that 19% of travelers showed their willingness to spend extra travel purposes in order to avail the services of green resorts (Bradley, 2019). The hotel industry has raised sufficient concerns for environmental degradation, and it is now considered to be a major pursuit for the hospitality sector.

This research paper gauged the factors that can serve to motivate customers to pay more for staying at green hotels, and found that environmentalism and other environmental awareness activities can play a pivotal role in influencing customers to opt for sustainable solutions (Jhawar, et al., 2012). Green hotels are becoming increasingly popular in today's era, with 61% of global

travelers intending to choose an eco-friendly accommodation at least once in their life (Statista, 2021) Factors such as trust and terms comprising green consumerism and ethical consumerism play a pivotal role in influencing the spending pattern of customers, with customers exhibiting a positive attitude towards green practices and increasing their spending pattern to ensure they are effectively playing a role in protecting and securing the environment. It has also been observed that customers are willing to spend 5-20% extra money on hotels that abide by environmental rules and regulations. (Chang, Hsiao, Nuryyev, & Huang, 2015).

The forth article (chapter 5) found that environmental certificates can serve as a signal to customers that a hotel is committed to sustainability, which can increase the perceived value of the hotel and ultimately influence the customer's purchasing decision. This finding is in line with previous research that has highlighted the importance of signaling theory in the context of sustainability (Bansal & Roth, 2000).

Moreover, the study found that the type of environmental certificate can affect the impact on the purchasing decision of online customers. Certifications that are widely recognized and have high standards, such as LEED or Green Key, are more likely to influence the purchasing decision of online customers compared to certifications that are less well-known or have lower standards. This finding is consistent with previous research that has shown that perceived credibility and legitimacy are important factors in the effectiveness of environmental certifications (Aravindakshan et al., 2015; Tornikoski & Newholm, 2012).

The demographic characteristics of online customers were also found to be a significant factor in the impact of environmental certificates on their purchasing decisions. Customers who are more environmentally conscious and have a higher level of education are more likely to be influenced by environmental certificates compared to customers who are less environmentally conscious and have a lower level of education. This finding is consistent with previous research that has shown that green hotels, which can lead to increased sales and pricing. Green certificates are important for promoting eco-friendly practices in green hotels, as they motivate customers to pay a premium for them. (Gupta, Dash, and Mishra, 2019).

This encourages customers to become more aware of environmental challenges and may strengthen the hotel industry's reputation. Hotels that adopt sustainable practices and align them with green operations are expected to have more customers. It is important for hotels to build their marketing strategy around sustainability as customers are more environmentally conscious and aware.

The results of this study have important implications for the tourism industry and for businesses that are seeking to attract environmentally conscious customers. Firstly, hotels can benefit from obtaining environmental certificates as they can increase the perceived value of the hotel and attract environmentally conscious customers. Secondly, hotels should consider the type of environmental certificate they obtain, as the impact on the purchasing decision of online customers can vary depending on the type of certificate. Lastly, hotels should consider the demographic characteristics of their target customers when promoting their environmental certifications, as this can affect the effectiveness of their marketing efforts.

In conclusion, the findings of this study contribute to the growing body of literature that highlights the importance of sustainability in the tourism industry. The adoption of sustainable practices and the use of environmental certifications can be a key differentiator for hotels, and can help to attract environmentally conscious customers. Future research could investigate the impact of environmental certifications on other aspects of the hotel experience, such as customer satisfaction and loyalty.

11 Limitations:

There are a number of restrictions that should be taken into account when conducting a doctoral thesis on how environmental certifications for hotels affect customers' online purchasing decisions. These restrictions may result from elements like the scope of the research, the accessibility of the data, the methodology, and the generalizability. Here are some possible restrictions to take into account:

- Limited sample size: The thesis may be limited by a small sample size of participants, which could severely compromise the reliability and external validity of the results
- Self-selection bias: Internet users who actively look for hotels that are environmentally certified may have different traits or preferences from those who do not place as much importance on the environment. This self-selection bias could affect the findings and prevent the conclusions from being applied to a larger group of online customers.
- Representativeness of the sample: The results of the study might only apply to the particular sample of hotels and online customers that were selected for the study. The generalizability of the results could be impacted by the sample's potential underrepresentation of the larger population.
- Possible confounding variables: It may be challenging to account for all possible confounding variables that could affect the purchasing decision of online customers, such as price, location, and availability
- Reliance on self-reported data: To learn about online shoppers' preferences and purchasing decisions, the study may use self-reported data from those users. Recall bias or social desirability bias, where participants may not accurately recall or report their actual behaviour or may provide responses that align with socially desirable attitudes, is now a possibility.
- Establishing a causal link between the existence of environmental certifications for hotels and the decisions made by online shoppers can be difficult. It may be challenging to determine whether the certificates directly affect consumer behaviour or if other elements, such as cost or location, have a greater influence.
- Limited control over external factors: The study may be affected by external factors outside of the researcher's control, such as modifications to market conditions, changes in the state of the economy, or changes in how people perceive environmental issues. These variables could influence online shoppers' purchasing choices and introduce difficult-to-account-for confounding variables.
- External validity: The results of the study may depend on the context in which they are used and may not necessarily apply to other sectors of the economy or places in the world. The generalizability of the research findings might be hampered by the unique characteristics and consumer behaviours that differ between industries and geographical areas.

Accurately measuring actual customer behaviour may be difficult, despite the fact that the study's primary focus is on online shoppers' purchasing decisions. It's crucial to carefully consider the difference between stated preferences and actual actions because online browsing and the intention to buy do not always result in bookings.

Addressing these limitations requires proper planning and design of the study, including a larger sample size to enhance statistical power and external validity. To enhance generalizability, the study could focus on a diverse range of geographical locations and demographic groups. Using a combination of self-reported and objective data may help to minimize the effects of social desirability bias.

Additionally, researchers could also conduct longitudinal studies that capture long-term behaviour changes and investigate the effectiveness of environmental certificates over an extended period. Furthermore, it is crucial to control for possible confounding variables by conducting regression analyses or matching techniques. Moreover, researchers must acknowledge the limitations inherent in their study design and address them openly.

Further research:

1. Online customer behaviour across different accommodation types: Explore how the effect of environmental certificates varies across different types of accommodations, such as luxury hotels, budget hotels, vacation rentals, or bed and breakfasts. Investigate if the impact of environmental certificates differs based on customers' preferences for specific types of accommodations.

2. Role of online customer reviews: Examine the impact of online customer reviews and ratings specifically related to environmental certifications on customers' purchasing decisions. Analyse the extent to which positive or negative reviews related to a hotel's environmental practices influence subsequent booking behaviour.

3. Impact of certification on customer satisfaction and loyalty: Investigate the relationship between environmental certifications, customer satisfaction, and loyalty. Assess how the perceived environmental performance of hotels influences overall satisfaction levels and the likelihood of repeat bookings and positive word-of-mouth recommendations.

4. Influencers and online communities: Investigate the influence of online influencers and communities on customers' decision-making processes. Explore how environmental certifications are discussed, recommended, or shared within online communities and the impact these interactions have on purchasing decisions.

5. Cross-platform analysis: Compare the impact of environmental certificates on purchasing decisions across different online platforms, such as hotel booking websites, online travel agencies, or social media platforms. Analyse whether customers' decision-making processes and perceptions vary depending on the platform used for hotel selection.

6. Comparative analysis of certification attributes: Compare the influence of specific environmental certification attributes, such as energy efficiency, water conservation, waste management, or sustainable sourcing, on customers' decision-making processes. Assess which attributes have a stronger impact on purchasing decisions and how they interact with each other.

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13. Appendix A

Survey Questionnaire

Effect of green certificates on the purchasing decisions of online customers

in green hotels: A case study from Saudi Arabia.

Gender:

Male Female

Age:

18-24 25-35 35-45 More than 45

Qualification

Bachelor Masters PHD

No		1	2	3	4	5
		SDA	DA	N	A	SA
1	Environmental concerns					
	I am aware of the green hotels.					
	I want to stay at a green hotel.					
	I am aware of sustainability issues.					
2	Green certificate & Award					
	Being a visitor/tourist of hotel, it is essential to me that the services of hotel are contains on hotel "green" accredited					
	I will go to a green hotel that is awarded with green certificate and award					
	My attitudes towards green hotel can be changed positively for hotel that is awarded with ISO 14001.					
3	Intention towards green hotel					

	It is worth paying for the service and quality of green hotels.					
	I think green hotels have consistent quality.					
	I think the services of green hotels are well-made.					
4	Intention to pay premium for sustainable production					
	It is worthwhile choosing green hotels when it comes to traveling.					
	I believe it is economical to visit green hotels.					
	I can pay more for green hotels.					

There are several techniques to measure concepts in studies when utilizing a Likert scale in a survey questionnaire; the one we utilized in this study is known as single-item measurement.

Scale of Likert: A Likert scale is a popular assessment method in which respondents rate their level of agreement or disagreement with a series of statements on a scale of 1 to 5. The intensity of respondents' attitudes or views of an idea can be captured using this method. Respondents, for example, can rate statements' agreement on a scale of "1 = Strongly Disagree" to "5 = Strongly Agree." Likert scales provide ordinal data that can be compared between groups or over time.

Measurements for a single item: Single-item measurements include evaluating a concept using a single sentence. Respondents rate their agreement or disagreement with the statement using a Likert scale. While single-item measurements are efficient, they may not capture all of the complexity of a concept.